S. Hrg. 99-773

METROPOLITAN TRANSIT AUTHORITY CAPITAL PROGRAM AND 63RD STREET TUNNEL

HEARING

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

FIELD HEARING

NEW YORK, NY

CONGRESSIONAL WITNESSES
DEPARTMENT OF JUSTICE
DEPARTMENT OF TRANSPORTATION
NONDEPARTMENTAL WITNESSES

Printed for the use of the Committee on Appropriations

U.S. GOVERNMENT PRINTING OFFICE

54-497 O WASHINGTON : 1986

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

5181-42

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METROPOLITAN TRANSIT AUTHORITY CAPITAL PROGRAM AND 63D STREET TUNNEL

SATURDAY, NOVEMBER 2, 1985

U.S. SENATE,
SUBCOMMITTEE ON TRANSPORTATION AND RELATED AGENCIES,
COMMITTEE ON APPROPRIATIONS,
New York, NY.

The subcommittee met at 10 a.m. at One Federal Plaza, New York, NY, Hon. Alfonse M. D'Amato presiding.

Present: Senator D'Amato, and Representative Green

CONGRESSIONAL WITNESSES

OPENING REMARKS OF SENATOR D'AMATO

Senator D'AMATO. The U.S. Senate Subcommittee on Transportation and Related Agencies of the Senate Committee on Appropriations is holding this hearing today with the approval of the subcommittee chairman, Senator Andrews.

Let me first say that the hearing record will remain open for 2 weeks. The record will receive as if read in their entirety, the statement of subcommittee Chairman Mark Andrews; prepared statements of invited witnesses who could not be here today for religious or personal reasons; and any material that we may request during the course of the hearing.

In addition, I am going to ask that my opening statement be received into the record as if read in its entirety.

[The statement follows:]

STATEMENT OF SENATOR ALFONSE M. D'AMATO

For the past 5 years, I have fought hard for Federal funding to rebuild the troubled transit system of our city. The battles in Washington have not been easy ones, but overall, with the help of the congressional delegation, we've been successful in ensuring a steady flow of critical Federal dollars for our subways and buses.

The Federal transit legislation of 1982 has provided more Federal transit dollars for this area's subway, bus, and commuter rail systems than ever before—over $450 million each year alone for rehabilitation and modernization projects throughout the transit system (that's $150 million more each year than the MTA had been receiving prior to this legislation).

That's all fine and well, and I'm happy to bring the Federal funds to New York which can make these vital projects possible. However, with these Federal funds comes a responsibility on the part of the MTA, and all recipients of Federal transit funds, to move these projects quickly and responsibly.

I would suggest to you that this has not been the case at the MTA, particularly the transit authority. I asked Senator Mark Andrews to have the Senate Transportation Appropriations Subcommittee hold today's hearing to examine how the MTA, and specifically how the TA, uses the Federal funds it receives.

We will be closely looking at issues including delays at the TA in putting Federal dollars to contract (as of June 1985, over $600 million in Federal funds have not been put to contract). Substantial delays in completing projects which have been started.

Quite frankly, I'm not at all pleased with substantial delays that have occurred in far too many projects. It is simply unacceptable that these projects languish while the commuters continue to suffer.

There are many examples of these delays—including the installation of a new police and train radio system for which $22 million in Federal funding was awarded in 1978. This project, critical to the safety and security of the commuters, transit police, and TA employees was initially scheduled to be completed in 1983, but is now estimated to be completed in mid-1986. On top of this, the radios have had quality control problems.

Finally, and most critically, we will examine how the MTA and TA manage these multimillion dollar, federally funded projects. Many of the delays and cost overruns which we have seen at the TA are caused by the lack of adequate project management procedures and the failure to ensure that procedures, if they exist, are followed.

The 63d Street tunnel and Archer Avenue subway projects have suffered similar circumstances. The 63d Street tunnel has been under construction for 16 years and has cost over $800 million. The U.S. Department of Transportation Inspector General found inadequate construction management practices related to concrete. We also know that these projects had not been maintained, which resulted in corroded equipment, and that recordkeeping and documentaiton was poor.

The committee has questions regarding the management of the new routes projects, as well as questions on issues raised in the CTL report, including the findings on the G–4 girder, the so-called cut beam.

In addition, we have spent $800 million on a tunnel which will carry only 2,800 people per day. For this money, we could have paid for apartments in Manhattan, costing $288,000 each, for each rider served, which would eliminate the need for these people to commute.

We must examine some very important questions, such as how much will putting this tunnel into service increase the TA's already strained operating deficits? And what are the future plans for this tunnel and its extensions?

Recently, there have been newspaper articles dealing with the question of whether the 63d Street tunnel will ever be put into operation. Some have suggested the possibility that the tunnel project be abandoned. Under Federal law a decision to abandon the project would require that the Federal Government be reimbursed for its share of the project—about $646 million. This is an issue which must be carefully reviewed and considered by all parties involved in the project.

We will also examine the Federal Government's role both during construction of the new routes and today, with regard to federally funded projects. Thus far, over $900 million in Federal funds were invested in these projects (total cost of $1.23 billion). What was the Federal Government doing to monitor these projects?

It is clear to me that Federal oversight wasn't sufficient. Ralph Stanley, who is the UMTA Administrator, has taken the Federal oversight role head-on, and he and I have had some productive discussions.

I am convinced that on major capital projects, the Federal Government must require, up front and before federally funded projects get underway, specific project management plans. Next week, I will introduce legislation which will require such plans as a condition for Federal funding. These plans will detail how the projects will be managed, the quality control and quality assurance procedures which will be in place, the qualifications of the people managing the projects, and other elements so that we're not confronted down the road with problems which could have been avoided. These considerations were clearly missing on the 63d Street tunnel and Archer Avenue projects.

We are here today with the purpose of improving our transit system, a system which is the life's blood of our city and region. We want to work with the MTA toward this end, and we appreciate Chairman Kiley and the TA president, Dave Gunn, for being here today.

The MTA has indicated that a fare increase may be required to close this budget deficit. Any fare increase, without improvements in the system, will only drive people from the subways and result in a further deterioration of the system. It is high time that we get the MTA capital program back on track.

Senator D'AMATO. Let me say that I have made my views clear on this issue, as has Congressman Green.

Our business today is to attempt to assure that the travesty, the fiasco of this project, this monumental boondoggle—and there may be some who take exception with that hard language—not be repeated in the course of the multibillion dollar reconstruction of our subways. We are going to work to assure that Federal dollars continue to come into our transit system, but we are equally committed to seeing that these funds are well managed and taxpayers get their moneys' worth. That is what this hearing is all about.

Congressman Green and I will be sponsoring legislation next week to guarantee quality control with respect to Federal construction dollars that come into our transit systems. At this very moment, MTA has more than $600 million worth of Federal dollars for projects that they haven't even put out for bid. There are hundreds of millions of dollars in MTA contracts which have been delayed, some for abnormally long periods of time. The first one that comes to mind is the police and transit employee radios. This is a $22 million contract. It is already 2 to 3 years late, and we now hear that the contract may not be completed for another 2 years. This directly impacts upon the ability of the transit police to communicate with one another. That is absolutely insupportable and it must not be tolerated.

At this time, I would like to call our first witness, Congressman Green.

Congressman, we thank you for being here today and for your strong interest in the area of mass transportation, which is the life blood of our city.

STATEMENT OF HON. BILL GREEN, U.S. REPRESENTATIVE FROM NEW YORK

Mr. GREEN. Thank you very much, Mr. Chairman. I want to thank you, and through you the chairman of the subcommittee, Senator Mark Andrews, for having this hearing here today. I think it is very appropriate that you be in the chair, because certainly mass transit has had no greater friend in the U.S. Senate than you have been, and you have won some signal triumphs for mass transit, particularly the amendment of the formula for mass transit aid in the 1982 infrastructure bill.

So, as I said outside, I think that everyone should understand in your presence here today and mine, we are not here as foes of mass transit, we are here as friends of mass transit, probably its two best friends, respectively, in the Senate and the House, and we are here to see that our efforts to get more money for mass transit in the future will not be damaged by the problems which are so evident and sort of brought into focus by this 63d Street subway tunnel situation.

I will not take up the subcommittee's time reviewing the details of the construction project with which the subcommittee is, of course, very familiar. I would simply point out that though the report of the consultant, which the MTA has now received, does not show any major, very dangerous faults in the construction work that would indicate to one that it would be unsafe to bring the tunnel into operation, nevertheless, the report does not tell us how much it will cost to repair the problems that do exist, and there are at least some areas, and particularly the chloride content of the concrete which, in turn, affects its ability to rust steel that it comes in contact with, that may require some significant amount of reworking as we move along with this, if the MTA so decides.

I would like to focus today on the operating problems. I am going to use for my figures on that a letter that I received from the MTA in response to an inquiry I had. It is a letter dated September 12, giving their fair estimates and their estimates of the operating costs. So I think we should understand that I am proceeding on the basis, not of my guesses, but of the MTA's own estimates as to the economics of this line.

I think that the first point that they make and that I want to make is that the line is expected, as it now exists, running from Manhattan to 21st Street in Queens, to generate only 65,000 additional rides annually. All the other rides on it will be rides that are diverted from other Queens-Manhattan lines. Since it will cost, again according to the MTA's estimate, $8 million a year to operate, obviously the annual income generated, even if the MTA goes ahead with its plan to raise the fare to $1, would be only $65,000, and that means that the loss will be $7.94 million each year, $7,940,000. In a sense, it would be cheaper to provide taxis for each new rider than to operate the subway line. I found that it costs $4.50 for a taxi ride from 21st Street in Long Island City, where the subway starts, to Sixth Avenue and 57th Street, where it meets an existing subway tunnel. If we divide the cost of running the system by the number of new riders, the cost per trip for the new riders amounts to approximately $123 per ride. That is astounding, but that is the fact.

There is, of course, the alternative of having the MTA extend the tunnel, connecting it with the Queens Boulevard line. However, I am told that the capital cost of that would amount to something approaching $250 million. That would increase the ridership, the new ridership, as opposed to the ridership diverted from existing lines, to about a million trips a year, but of course it also increases the operating costs, and the net annual loss would be about $15 million.

Now, these kinds of losses, with over 90 percent of the cost of operating the system not covered by the farebox, contrasts with 50-percent coverage in the rest of the system as a whole. And just as a celestial black hole seemingly absorbs money and light without end, so this subterranean black hole absorbs money.

As the chairman knows, it has become more and more difficult for us to keep Federal aid flowing for mass transit operating costs in the face of the budget deficits we are facing on the Federal level, and opposition from many Members of Congress. This sort of wasteful project hurts us when we try to fight for Federal aid for the cities, and it uses money that is needed for other worthy programs, both in the transit field and areas like health and education.

As a member of the House Appropriations Committee, I shall continue to fight in Congress for Federal aid to mass transit. But the MTA cannot expect an endless supply of money from the national pocketbook, nor can it afford to squander its own. Here in the city, subway and bus riders are facing a fare increase, and this system will strain the MTA's finances even more, to the annual tune of $8 to $15 million.

The tunnel looks like a perpetual loser. Unless there is some great transportation need or social value demonstrated, the MTA really has to consider abandoning the project. I know that an estimate $600 to $800 million has been spent. When you add in the costs of repairing the leaks and other problems that have arisen because of the construction situation, the possible added costs of $250 million to link up with the Queens Boulevard line, and the operating costs I have mentioned, I think there is a real question as to whether there is any way you can financially justify going ahead at this point. I hope that this hearing will explore those issues.

Again, Mr. Chairman, I thank you very much for holding this important hearing. You have been a great friend of mass transit and I look forward to working with you in an effort to reaching a just and equitable solution to the problem.

Senator D'AMATO. Congressman Green, let me, first of all, thank you for your efforts on mass transportation. There is no one who can question them. There are some people who say, "Oh, you shouldn't talk about these things. Just duck your head and pretend that they are not happening." If we do that, it seems to me that there will be no assurance that the $8 to $10 billion which the MTA will be investing over the next decade will be spent wisely. There is nothing to guarantee that we don't have a repetition of this fiasco.

I would like to ask two things: No. 1, I request that you submit a copy of the September 12th letter that you received from the MTA, into the hearing record.

No. 2, let us talk about the operation of the tunnel, because I am going to ask this same question of the MTA. It seems that this matter was also raised in 1981. The question is whether it is realistic to put the tunnel into service? Almost 5 years ago TA engineers were exploring the question: "Should we go ahead with this or should we cork it up?" What about the cost per rider? Somehow there is no response to that issue.

How many dollars per rider do you estimate, given the figures that the MTA has provided to you, it will cost to use the 63d Street tunnel?

Mr. GREEN. Well, for each new rider added to the subway system's ridership, we estimate that a trip will cost $123. That is the incremental cost of attracting these riders to the system.

Senator D'AMATO. One trip.

Mr. GREEN. Let me say that I share your concerns for the management quagmire that seems to exist. It seems to me disturbing that the Governor had representatives on the MTA board—and it is afterall a State agency—and yet he seems to have been unaware as these problems were developing. No one brought word to the Governor. The mayor has representatives on the board, and yet he seemed to be unaware that these problems were developing. So you really have to ask yourself, what has happened in the management that this communication with the elected leadership that is ultimately responsible and is ultimately going to have to come up with the money, what happened that this communication broke down so completely? And, as you have indicated, it seems to have broken down between the technical staff and the top management of MTA.

Senator D'AMATO. Thank you very much, Mr. Congressman. I now ask you to join me on the panel.

[The statement follows:]

STATEMENT OF REPRESENTATIVE BILL GREEN

I am concerned that operation of the 63d Street subway tunnel, which runs through my district, will create a constant financial drain on public funds. This line is expected to generate only 65,000 additional rides annually. It will cost an estimated $8 million a year to operate, but even if the cost of a token rises to $1, the annual income generated would be only $65,000. Thus the effective operating loss will be $7.94 million each year.

In one sense, it would be cheaper to provide taxis for each new rider than to operate this subway line. I found that it cost $4.50 for a taxi ride from Sixth Avenue and 57th Street in Manhattan where the tunnel starts to its terminus at 21st Street in Long Island City. If we divide the cost of running the system by the number of new riders, a trip would cost about $123 per person.

If the MTA were to extend the tunnel, connecting it with other existing lines (at an additional capital cost of $250 million), ridership would increase to about 1 million trips a year, but operating costs would rise and the net annual loss would be about $15 million.

While the farebox covers 50 percent of operating costs for the subway system as a whole, for this line the fares would cover about 1 percent to 6 percent of operating costs. This is a burden to a system already strained financially.

As a celestial black hole seemingly absorbs matter and light without end, this subterranean black hole absorbs money. And as the chairman (Senator Alfonse D'Amato) knows, it has become more and more difficult for us to keep Federal aid flowing for mass transit operating costs in the face of budget deficits and opposition from many Members of Congress.

This sort of wasteful project hurts us when we try to fight for Federal aid for the cities and it uses money that is needed by other worthy programs such as health and education.

As a member of the Appropriations Committee, I shall continue to fight in Congress for Federal aid to mass transit, but the MTA cannot expect an endless supply of money from the national pocketbook, nor can it afford to squander its own. Here in the city, subway and bus riders are facing a fare increase, and this system will strain the MTA's finances even more as the yearly $8 to $15 million loss for the new line will have to be covered.

The tunnel looks like a perpetual loser. Unless there is some great transportation need or social value demonstrated, the MTA should consider abandoning this project. An estimated $600 to $800 million has been spent, and added to that will be the cost of repairing the leaks and other problems that arose from lack of maintenance. True, if we stop now, the money already spent would be lost. But according to the MTA's own ridership and revenue figures, to continue the project would be to continue the losses. The agency, the Government, and the public might be better served with money spent in more efficient ways.

NONDEPARTMENTAL WITNESSES

STATEMENT OF EDWARD V. REGAN, NEW YORK STATE COMPTROLLER

Senator D'AMATO. Our next witness will be New York State Comptroller, Edward V. Regan.

Mr. Regan, we thank you for your cooperation and for your attendance today.

Mr. REGAN. Thank you very much, Senator, members of the subcommittee, Congressman Green. I appreciate the opportunity to testify at this hearing. I will be brief.

Over the years our office has closely monitored MTA activities to identify problems and recommend solutions relating to such vital New York City transit issues as intolerable service levels, low worker productivity, wasteful utilization of resources, inadequate capital development procedures and practices, and poor financial control capacity.

Despite the scores of audits and special reports issued by my office and other public officials and interested groups, and despite the very recent signs of improvement in some service areas, significant improvement in crucial areas of MTA operations so far has proved mainly elusive. The reason is a fundamental flaw in the management structure of MTA. That flaw is the complete lack, which Congressman Green just referred to, when he talked about the mayor has some appointments and the Governor has some appointments, the complete lack, as his statement so aptly illustrated, of targeted public accountability for the parade of horrors that characterizes the subway system we have today. Stations beset by crime. Stuck doors and garbage-strewn cars, delays and delays.

There is no one elected official to hold responsible for these daily indignities suffered by the riding public. That is the subject I shall address when I conclude. For now, I would like to turn to the particular topic of today's hearing—the MTA's New Routes Program. More specifically, the 63d Street subway project.

In November 1967, New York State voters approved a $2.5 billion transportation bond issue to construct and approve transportation capital facilities across the State. Six hundred million was earmarked as the State's share for constructing new subway routes in New York City, with the city contributing an additional $451 million, for a total of $1.051 billion in 1967, to be spent on what was known as the New Routes Program.

The MTA developed—here is the problem—the MTA developed a basic plan for this program which consists of 13 projects in 4 of the city's 5 boroughs.

In an audit of the program conducted in 1979, my office found that the New Routes Program was almost instantly beset with substantial cost escalations. By 1971, it was estimated that the program would cost some $1.7 billion, or more than 70 percent over the original cost estimates that had been made just 4 years before. We also found that only 4 of the 13 projects originally proposed were considered active. These four projects, including the 63d Street subway, were known collectively as the Queens Trunk Line. The other nine projects had been deferred, at a cost of close to $100 million in unrecoverable expenses.

At the time of our audit it was estimated that the cost of completing the four active projects, the Queens Trunk Line, would be almost $2 billion, or almost 6 times the amount originally estimated to complete these 4 projects, and almost twice the total amount initially estimated to finish all 13. In addition, the QueensTrunk Line was not expected to be fully operational until 1990, or some 15 years later than was originally planned.

The reason for these cost overruns in construction delays was simple: Rather than being based on real transit needs, the program was concocted to get voter approval for the 1967 transportation bond issue, and to leverage, in turn, Federal mass transit dollars, period. Most likely the Queens Trunk Line was a lure to generate middle class voter support in four of the boroughs throughout this city for the bond issue. Because the program was devised to satisfy political instead of transit considerations, the planning involved in setting up the program was slipshod and unprofessional.

But even if the program had been well thought out and grounded in a sound transit rationale—which it was not—the result, unfortunately, would have no doubt been the same. For the New York City Transit Authority, which has the responsibility now of implementing the New Routes Program, lacks the ability to develop, organize, supervise and control large capital projects.

Senator D'Amato. Mr. Comptroller, at this point, let me ask you a question. As you are aware, we are in the process of appropriating substantial Federal dollars for a massive rehabilitation of the subway system in New York, right?

Mr. Regan. That's right.

Senator D'Amato. In your opinion, does the MTA have the technical capabilities, the management capabilities, and the organizational structure to undertake that multibillion dollar capital reconstruction program?

Mr. Regan. No.

Senator D'Amato. I would ask you to continue, and then maybe we can——

Mr. Green. Could I go a little further at that?

Mr. Regan. Sure.

Mr. Green. Back in 1978, I remember shortly after I was elected to Congress, there was a visit to New York City to see our transportation problems, by Representative Bud Schuster, who was ranking Republican on the Surface Transportation Subcommittee of the Public Works Committee in the House, and was also, at that time, chairing a commission on national transportation needs. And he was taken around by the then chairman of the MTA, Harold Fisher. And I can recall Chairman Fisher saying to Representative Schuster that the MTA really could not handle more than $300 million a year in terms of capital projects, whether it was construction or acquisition of subway cars, buses, because that was the limit of its staff. And, of course, there were problems of rather cumbersome bidding provisions and the like.

Is part of the problem the fact that they are now going, in terms of the money they are getting from the Federal Government and the State, at a much higher rate, but do not have the staff to accommodate the higher rate?

Mr. REGAN. That is the problem.

MTA engineering, the staff, the capital planning process, was once one of the best in the Nation. And it was allowed—because there is no management accountability—it was allowed to slip into disuse, disrepair. As I pointed out in the press conference, they were so good, so professional in the mid-1960's, that they had to be avoided, because of their excellence they had to be avoided when it came time to do the feasibility study for the New Routes Program. One can only speculate that they were avoided because that once proud organization would have turned thumbs down on such a project as we are now dealing with. And as I said in the press conference, the feasibility study for the New Routes Program, for the Queens Trunk Line, for the 63d Street tunnel was given, rather than to a once highly professional organization, was given to a very newly formed and thinly staffed MTA board.

OK. Audits by my office, and we will go back to the question that the Senator asked, when he elicited, hopefully, for an auditor and a politician a very clear one-word answer, and a very accurate one.

Senator D'AMATO. I think that the bill that Congressman Green and I are introducing is extremely necessary. How can we justify allocating millions to the MTA for a massive rebuilding program if they do not have the capabilities to undertake this responsibility? Aren't we just going to have a repeat of the fiasco we have seen in the 63d Street tunnel?

Mr. REGAN. The answer is "Yes." And that is just why your bill is absolutely essential and just why your bill has got to be passed and just why your bill, rather than limiting transit aid to New York City, will increase the ability of New York City to increase Federal funds; increase it. It is vital; it is necessary.

Let me explain in a few minutes what I mean and why your bill is so essential.

Audits by my office that were released just this February, and just last May of this year, examining the TA's $6.4 billion portion of the MTA's $8.5 billion 5-year capital program, the money that was generated primarily when Chairman Ravage was running the MTA, the 5-year capital program clearly demonstrates the TA's inability to handle large amounts of capital funds. I want to quickly point out that these audits were initiated, in part, at the suggestion of Robert Kiley and David Gunn. When they came in, I took our top people up to discuss how we could help. We are not hit-and-run artists. We want to help. That is why we are here. And within 5 minutes, sitting around with their top staff and our top staff, we knew that the capital planning process of the TA had to be the focus of attention. And that is an important fact. Rather than try to thwart us, they were openly encouraging us to come in and take a look at what they had discovered.

Here are just some of what those audits revealed.

A major trouble area we uncovered was the TA's procedures for estimating project costs. For example, the TA did not have a uniform method of estimating the cost of specific projects before they were put out to bid. Nor were standard price lists maintained that could have helped the TA set reasonable cost estimates. We found, too, that the TA often used the wrong inflation factor in estimating projects costs. And that it frequently failed to utilize economies of scale, all of which resulted in inaccurate estimates that often varied widely from what the contractors actually bid on specific jobs. Management, therefore, was unable to determine whether bids were reasonable or whether they were too high and should be rejected.

We also uncovered problems in the area of information management. A computerized capital project information system was set up by the TA to help it keep track of individual contracts involved in its capital program. However, it was plagued with long operating delays and frequent breakdowns, thus inhibiting, rather than helping the TA to stay current on the status and cost of its more than 700 capital projects.

There were serious deficiencies, too, in the crucial area of personnel, specifically the professional engineers whose job it is to oversee the capital program. We found that a large number of newly hired TA engineers were graduates of nonaccredited engineering schools, which originally, of course, would have disqualified them from employment as engineers by New York State. There was also a high turnover rate in the crucial midcareer years of years, as many engineers left the TA for jobs in private industry. As a result, more than 40 percent of the TA's engineers had only 5 years or less experience with the authority, 40 percent under 5 years. And we found that the majority of the TA engineers did not have job performance regularly evaluated.

Now these are just a few—and I mean that—just a few of the many serious problems we uncovered. Of course, we also recommended ways to deal with the problems we found. I am happy to say that both Mr. Kiley and Gunn are taking steps to implement many of these recommendations, just as they had started to implement many of the suggestions for management improvement we have made in other MTA audits.

Nevertheless, what our audit findings revealed was a $6.4 billion capital program that could hardly be called a program at all. Instead, it was an overly ambitious project imposed on a severely flawed system, ill-prepared to develop and implement a capital plan. In a sense—this is the answer to your question—it revealed a transit authority that simply got rusty along with its equipment. After years of not getting enough money to fund capital outlays, its ability to handle large sums of money declined very sharply.

The techniques, procedures, and management abilities necessary to effectively implement large-scale capital projects no longer exist. As a result, the TA's $6.4 billion capital program is years behind schedule, and millions of dollars over cost. For example, in 1984 the TA entered into capital contracts for less than a third of the $1.6 billion it had planned for that year. And the short fall for 1985 will be more than 50 percent of what was originally planned.

In my judgment the difficulty is not an employee problem, it is just not. It is a management problem. And that ultimately relates to public accountability. For even if we succeed in getting the TA's 5-year capital program and the 63d Street tunnel back on track, the same problems would arise in the future. That is because when things go wrong—and they have gone disastrously wrong with the capital plan and the 63d Street tunnel—when things go wrong, New Yorkers have no one to complain to, no one to hold publicly accountable for the failure of their transit system. To put it another way, if New Yorkers are unhappy with the way their transit system is operating, whom should they punish? Whom should they vote against? Should they vote against the mayor? The Governor? City council members? Assemblymen? State senators? Or, perish the thought, their State comptroller?

While each of the above-mentioned political officeholders might be—

Senator D'AMATO. Luckily, you didn't say Congressmen or Senators?

Mr. REGAN. No; I am always courteous.

While each of these above-mentioned political officeholders might be able to generate public support for transit reform, none is responsible for running the system. So exacting a pound of flesh by voting against any or all of them will not do much good.

Now, no private business can function unless it turns a profit. If it does the wrong things and winds up in the red, then it most likely goes out of business. That is the discipline of the bottom line. Similarly, public agencies need discipline too. Here it is the discipline of the ballot box; and therein lies the problem with the MTA. To be sure, the Governor and the mayor appoint most of the board members of the Metropolitan Transit Authority, which runs the TA, which runs the subways, but no single officeholder directly appoints a majority of the governing board. The result is that nobody is directly responsible to the ridership or to the public or to the Federal taxpayer who provides these funds, or to our Senator that generates it, or to our Congressman that generates it, nobody is directly responsible for the failures of the transit system, which are legion. In short, public accountability is thwarted by the way the system was purposefully, in my opinion, purposely set up. That has to change.

Governor Cuomo apparently agreed when he proposed expanding the MTA board so that he would appoint a majority of its members, a position he reaffirmed just the other day. The Governor's original proposal was shot down not so much on its merits, I believe, but because it was not presented with sufficient sensitivity to other elected officials currently involved with the MTA. I hope the Governor will revive his idea and establish a consensus for his plan. In this he has my support, because I believe that New York City and New York State, and our Federal taxpayers need a means of making the transit system accountable. And the best way to accomplish that is to give the riders and the voters accessibility to management at the ballot box. For what the passengers of our subway system need, as much as anything, is somebody to vote against when things go wrong and somebody to vote for when things go right. Only then will we be able to avoid future foul-ups, such as the 63d Street subway debacle. And only then will we get the kind of transit system New Yorkers need and have a right to.

Thank you.

Senator D'AMATO. Comptroller Regan, I want to thank you for your thoughtful presentation, for the audits you have done, and for the insight that you have shared with this committee. I would also like to impose upon you once more, if I might, to ask if you and your staff would review our legislation with a view toward suggesting additional management procedural improvements. You have been dealing with this issue and know where shortcomings are present.

Obviously, we are going to be most interested in the progress and the direction that Chairman Kiley has undertaken to deal with deficiencies in the MTA's management system. I think all of us can understand when you go from a capital program of limited resources to one in which there are hundreds of millions of dollars spent annually, you have got to see to it that you have the necessary engineering capabilities, the planning capabilities, and the technical ability to undertake a program of this magnitude. Otherwise, there is chaos, and the expenditure of vast sums of money with no appreciable improvement to the system.

Thank you again for your testimony.

Mr. REGAN. We will get on that first thing Monday morning.

Senator D'AMATO. I will ask that our staff share that legislative initiative with you. We look forward to your input.

Mr. REGAN. Thank you very much. Thank you.

DEPARTMENT OF JUSTICE

FEDERAL BUREAU OF INVESTIGATION

STATEMENT OF FRANK DERONJA, METALLURGY UNIT, FEDERAL BUREAU OF INVESTIGATION

Senator D'AMATO. Our next witness is Frank Deronja. Mr. Deronja is a metallurgist with the FBI Laboratory in Washington, DC, and he will testify with respect to the G–4 girder.

Senator D'AMATO. Mr. Deronja, will you give this committee your background and tell us by whom you are employed?

Mr. DERONJA. Yes, sir.

Senator D'AMATO. If you will, please take the larger microphone, put it directly in front of you, and speak right into it.

Mr. DERONJA. Mr. Chairman, I am a special agent with the Federal Bureau of Investigation, and for the past 20 years of my career I have been assigned to the FBI Laboratory in Washington, DC. Specifically, I am assigned to the metallurgy unit of the laboratory.

One of my responsibilities at the FBI Laboratory is to conduct examinations of evidence submitted to the FBI. In particular I conduct examinations which is a——

AUDIENCE PARTICIPANT. We can't hear back here at all.

Senator D'AMATO. Is the microphone on?

Mr. DERONJA. The microphone does not appear to be on.

Senator D'AMATO. Go ahead, Mr. Deronja.

Mr. DERONJA. As I was saying, I conduct examinations of evidence which is a metal or which is made from a metal. I also have the responsibility for providing technical assistance to our field operations, where such assistance is requested.

With respect to my academic training, I have a bachelor of engineering degree in metallurgy from Youngstown University in Ohio, and a master of science degree from Columbia University here in New York. I also have a professional engineer's degree from Columbia University. This is in metallurgical engineering. And I have spent approximately 10 years on the research staff at the Columbia University Metallurgy Department.

Senator D'AMATO. We are going to ask that the balance of your professional accomplishments be inserted into the record as if read in their entirety.

Mr. Deronja, did you have an opportunity to review the CTL document in regard to the 63d Street tunnel?

Mr. DERONJA. I did not have an opportunity to review the complete documents.

Senator D'Amato. Did you have an opportunity to review it with respect to girder G–4, the so-called cut-beam located in tunnel section 5? Did you have an opportunity to review that?

Mr. Deronja. Mr. Chairman, I have conducted a number of inspections and reviews of the G–4 girder and the documentations relative to that girder. And if I may, I would like to describe these inspections and the results of the inspections.

Senator D'Amato. Good. We would appreciate that.

Mr. Deronja. In the early part of 1984, the FBI Laboratory was requested to conduct an on-site inspection of a main structural support girder in the New York City Transit Authority tunnel. The objective of the inspection was to determine if the beam had been modified, relative to its original design. And if so, to determine if the modified beam was adequate to support the original design load.

The beam in question was described as a concrete encased, welded plate girder, with external dimensions of approximately 37-by-5-by-4½ feet. And is designated G–4 on Transit Authority planned drawings for the tunnel ventilation shaft located at FDR Drive and East 63d Street. The beam spans across the tunnel and is part of the roof above the inbound and outbound train tracks.

The drawings showed that the plate girder would have an eye cross section with a single plate forming the web, and two plates in a horizontal position forming the top and bottom flanges.

After a review of the then available Transit Authority drawings and specifications, an on-site inspection of the support beam was conducted. This inspection revealed that the actual depth of the beam was approximately 14 inches less along the central portion of the beam than was depicted in the Transit Authority drawings. Magnetic field measurements indicated that the bottom flange of the girder was consistent with the flange width shown on the drawings.

It was further observed during that inspection that the concrete cover of the beam contained some cracks on the tension side, and they hold approximately 5 to 7 inches across in the cover over the bottom flange, and showing approximately 1¼-inch thickness for the cover at that location.

In March 1984, a review was conducted of Transit Authority field sketches and related documents, which showed modifications to the G–4 beam and to the wall above the beam. These documents revealed that the original plate girder had been reduced approximately 13 inches by cutting the lower portion and replacing the lower flange plate with two plates from another eye beam.

The documents further revealed that the replacement flanges were affixed to the vertical surfaces of the shortened web by partial penetration welds, and that additional reinforcing bars were required in the weld directly above the beam to compensate for the reduced strength of the modified beam.

In April 1984, I observed the efforts of a structural engineering group retained by the Transit Authority to obtain some more data relative to the G–4 beam and the weld above the beam. It appeared that they were unable to establish whether or not the required additional reinforcing bars were in place above the wall of the G–4 beam. Subsequently, I reviewed the group's report, and my review revealed the following:

No. 1, the group found the modified beam to be adequate for the specified loading. However, the strength calculations in the report apparently relied solely on drawings and information supplied by the Transit Authority. There had been no apparent independent verification that the additional necessary reinforcement was present in the wall above G–4, or that the actual G–4 girder configuration was as is depicted in the G–4 modification documents. It is noted, however, that the Transit Authority construction photographs, which were furnished, did appear to show the presence of additional reinforcement in the wall above G–4.

No. 2, the calculations to determine the lowered allowable low beam of the modified G–4 beam are based on the assumptions that the beam cross section is uniform over the entire length, and that the beam cross section is of conventional design. Neither of these conditions exist in actuality. Consequently, the formulas used to make the calculations may not be appropriate, and thus the calculated values may not be realistic.

No. 3, the G–4 modification drawing indicates the new, lower flange plates were welded to the vertical surfaces of the shortened web by the use of partial penetration welds. Such welds are not permitted in structures if there will be significant tension stresses acting across the welds. There is no indication in the report that the group's evaluation considered the nature of the stress system at the welds.

In October 1984 I conducted drilling tests on the G–4 beam in an effort to directly verify some of the characteristics of the modified plate girder. The tests revealed that the lower flange width, as well as the arrangement of the flange plates relative to the web, are consistent with the beam as depicted in the modification drawings for G–4. The test drillings further revealed that the concrete cover on the bottom side of the beam in the region tested varied in thickness from approximately one-half inch at the web location, to approximately 2 7/8 inches at the flange edges.

Construction manuals indicate it is desirable to have a concrete cover of at least 2 inches, preferably 3 inches, to protect underlying metal from corrosion and possible exposure to fire. It was observed during the test just described that there was considerable water flow and seepage from concrete cracks in or in the immediate vicinity of the G–4 beam.

Because of the thin concrete cover over the center of the girder where the flange pstructural engineering beam design manuals and reference publications did not reveal any beam designs that used either of the two configurations for assembly of girder components as appear in the G–4 modification. That is, No. 1, use of two parallel bottom flange plates and attachment of the plates to the vertical sides of the web; and, two, use of a bottom flange that is not continuous along the length of the beam.

The modified G–4 beam design, therefore, appears to be an untried design configuration, for which it is difficult, if not impossible, to mathematically predict stress distribution under loading. When methods of calculation suitable to a particular design do not exist or are uncertain, the recommended procedure is to conduct beam-loading tests to determine the loading behavior of the design prior to its incorporation into a structure.

I am not presently aware that any such tests have been conducted with respect to the G–4 girder.

Senator D'AMATO. Let me ask you, in your opinion, after reviewing the CTL report as it relates to this beam, and after performing your inspections, as you have outlined, are you satisfied as to the safety of the modified G–4 beam?

Mr. DERONJA. Senator D'Amato, I did not review the CTL report in its entirety, so I am not in a position to comment with respect to——

Senator D'AMATO. Just as to the girder?

Mr. DERONJA. Excuse me?

Senator D'AMATO. Just as to the girder?

Mr. DERONJA. With respect to the girder, I am not in a position, at this time, to give an opinion as to whether the girder is safe or adequate. Based on my observations and inspections, I do have two problems with the girder in its present form, and that is, No. 1, the presence of a partial weld, partial penetration weld, and the fact that it is not possible to determine what stresses are acting across the weld. I also have a problem with the fact that the bottom flange is not continuous across the length of the girder.

And I also have a problem with the fact that the way the girder is assembled—that is the modified girder—the way the components is put together is an unconventional method for making a girder. And I think until appropriate loading tests are conducted on a prototype beam, the answer as to whether or not the beam is a safe and adequate beam cannot be determined.

Senator D'AMATO. Well, thank you for your testimony. I have a number of written questions which I am going to submit to you. I know Congressman Green has a number of questions.

Let me say this to you, that when my staff people called CTL, they were told that because the MTA is CTL's client, CTL is restricted from answering certain questions. It became rather obvious to my staff that CTL's report was incomplete because after first saying it was complete regarding the beam, CTL then stated, "We still need additional information. We still have to go out and do the kinds of things that you suggested are necessary." They stammered and stuttered.

If necessary, I intend to subpoena CTL to testify in Washington should their completed report fail to provide satisfactory explanations with respect to the partial welds, as contrasted to the full penetration welds. There seems to be a very real difference in strength between partial penetration welds and full penetration welds. CTL wasn't in a position to comment on this because they didn't know what type of weld was used.

I don't know what kind of inspection they made on girder G–4, but I am not satisfied. It may turn out that, indeed, the beam is safe, but it seems to me—and I don't know if you read that part of CTL's report regarding girder G–4—that their conclusion as to its safety is absolutely based upon assumptions made without undertaking the proper engineering studies that you have indicated.

Again, I don't know whether you have read that part of their report with respect to girder G–4, but I would ask you once again, would you be satisfied with the conclusion CTL reached based upon the information that they described to you?

Mr. DERONJA. As I said, I think it would be improper for me to comment on the results of that report if I have not had the opportunity to review the entire report.

Senator D'AMATO. I would ask you then if you would review that full report, and then give us your opinion for the hearing record, as to the safety of the modified G–4 beam.

Congressman Green?

Mr. GREEN. Just so it is clear to me, a layman, what you are saying, do I understand you to say that because of the unconventional design of the modified beam, it is impossible, just by doing mathematical calculations to know that it works right. That, in fact, you cannot stress test it in place, and that, therefore, you are saying that in order to have confidence in the beam one would have to reproduce it in essence, a prototype—I think was the word you used—and apply stress tests to it. Is that accurate?

Mr. DERONJA. That is correct; yes, sir.

Mr. GREEN. Thank you, Mr. Chairman.

Senator D'AMATO. Let me ask you just one other thing relative to the modification made on the bottom flange of the beam. Where is most of the strength located in the beam?

Mr. DERONJA. In the horizontal beam the load-bearing component of the beam would be on the tension side, which would be the bottom flange portion.

Senator D'AMATO. So when that bottom flange is cut, where does the stress on the load-bearing part of it move to?

Mr. DERONJA. It would move upward.

Senator D'AMATO. Would it move to the welds?

Mr. DERONJA. OK, I am—we have to be a little more specific as to what beam configuration we are talking about.

Senator D'AMATO. Well, with respect to this configuration, would it move to the area of the partial-penetration welds? Isn't that one of your concerns, as to whether the welds were full-penetration welds or partial-penetration weld?

Mr. DERONJA. No, my concern is that—and what is important is the direction in which the stress is acting upon the weld. If the stress is acting parallel to the weld, and it is a partial-penetration weld, then that is permitted. There is no problem with that type of weld. If there are stresses acting across the weld, then you have a problem. And the problem with the modified beam is that one is unable to calculate or determine if there are significant stresses acting across the weld. So this is an issue that, as I view it, can be resolved through testing of a prototype beam.

Senator D'AMATO. How would you resolve in the testing of a prototype, the problem that you described with respect to the thinness of the cement? You indicated that the cement measures from a half an inch to 2 inches and that seeping water might have corrosive impact in the area of the partial-penetration welds. Does that raise any concern in your mind?

Mr. DERONJA. I do have concern with the fact that there is insufficient concrete cover to protect the girder, particularly in the location of the welds. And I don't know what the answer is with respect to how can one put another cover on there, since it is my understanding that there is really not sufficient clearance on the bottom of the beam to put on a thicker cover.

Senator D'AMATO. Mr. Deronja, we thank you for your cooperation. My final question is: In your opinion, if no prototype was used, should the modified beam have been incorporated into the tunnel structure?

Mr. DERONJA. If I have the responsibility of making that decision, I would not have placed a modified beam in the structure without adequately determining the answers to the concerns that I have expressed; namely, the stress distribution across the welds, and the effect that one has as a result of the bottom flange not being continuous along the length of the beam. And also the effect of assemblying a beam with the unusual configuration that it has. I think I would recommend that before the beam be placed into operation a prototype beam be tested to see what the response of that configuration would be to the loading that was applied.

Senator D'AMATO. To a layman, it would appear that the configuration came about as a result of necessity, which is the mother of many inventions. They had a beam of some 58 inches in width—evidently, 10 inches had been added to a 48-inch beam. Then they had to cut this beam down where the trains would pass underneath because it did not give sufficient clearance. So if anyone is going to say that they tested this or took this into consideration, I think they would be strangers to the truth.

The fact is that this was a matter of necessity, to get around what would otherwise have been the proper procedure, and that was to build a prototype. If one is going to use unconventional methods, one must perform the proper tests to assure that the needed structural strength is going to be there.

I won't ask for your comment. Do you care to comment?

Mr. DERONJA. No, sir.

Senator D'AMATO. Congressman, do you have any further questions?

Mr. GREEN. No; I have no further questions.

Senator D'AMATO. Let me thank you very much for your testimony. I am wondering if you would, within the next 2 weeks, review the CTL report with respect to the G–4 girder and then, possibly, you would be in a position to better answer the questions we have asked.

Mr. DERONJA. OK.

Senator D'AMATO. Thank you very much.

Mr. DERONJA. You are welcome.

DEPARTMENT OF TRANSPORTATION

URBAN MASS TRANSPORTATION ADMINISTRATION

STATEMENT OF RALPH L. STANLEY, ADMINISTRATOR

Mr. STANLEY. Senator, if I might, I would like to thank the committee for this opportunity to appear before you and also indicate our support for this oversight from Congress on how we manage our federally funded program.

I would like to submit my written statement, if I could, for the record, make a few opening comments about our concern as an agency, and then proceed with the questions I know that the committee has with regard to the 63d Street project, as well as the MTA, and more specifically the TA's ability to manage federally funded projects.

Our concerns are threefold. As the Senator is aware, at your request and based on your tour of the 63d Street tunnel, we have suspended funding for that project until some of the critical questions that are of interest to this committee, to our agency, and also to the MTA are answered. More than the management of the 63d Street project, Archer Avenue, or Second Avenue, I was concerned about the overall ability of the MTA to move capital projects, to properly allocate and spend appropriated and obligated Federal funds. I was also concerned, based on their lack of knowledge and maintenance with this project and others, about their overall capital program.

One of the other issues that was raised during the course of the last year, and one we have raised, is not just the delays in projects such as this, but the inability of the MTA to commit funds to capital projects in a timely and expeditious fashion.

As of June of this year our agency reviewed all the existing capital projects of the MTA, to find that over $600 million in Federal funds appropriated by Congress, obligated by the Urban Mass Transportation Administration, had not yet been put under contract. Not only that, but even where funds are under contract, project after project experiences delays. We find time after time a common denominator was an inadequate budget schedule and project management procedures at the MTA.

The issue that is before our agency and before this committee, and I think the question that we have got to answer today in moving forward in supporting the critical needs of mass transit in the New York City area, is where do we go from here? How can we, as an agency, improve our oversight of these critical federally funded projects? What tools do we need? And what we can do as an agency?

I would say at the outset this problem has not been unique to New

York. We have, within the last 2 years, increased our oversight capability in Miami, in Detroit, in San Jose, in Sacramento on other major capital projects. We will have, with the assistance and support of this committee and the Appropriations Committee in the House, funding in 1986 that will enable us to hire project management oversight firms that will report directly to UMTA, that will keep track of ongoing projects of this size, and other major capital projects from their beginnings. And, finally, I want to thank the Senator and the committee for the legislation introduced today that would authorize UMTA to continue to have this kind of oversight function and be able to spend funds available in 1986, to assure that this kind of difficulty on a capital project and these kinds of delays we have seen at 63d Street never, ever, ever again repeat themselves.

We have in the last 2 months worked closely with the TA, have gotten several submissions from the MTA about efforts on their behalf to improve not only their project management, but their own internal management of federally funded projects. We have received from them as of October, a project management schedule; a means by which they will improve their internal communications. We have reviewed the way they intend to organize their engineering and construction, and specifically their project management offices on each of the individual federally funded projects we have. We have asked for and received from them their progress reports on each and every Federal project that we have funded in the past, and those for which they have applied in the future. The critical issue, I think, in the next few months and in the next year is whether these good intentions, whether these reports, whether these procedures that the TA is working on are going to be implemented. And I can say unequivocably, with the help of the legislation that has been introduced today and the support we have gotten from this committee in terms of funding direct management oversight from UMTA, it is our intention to make sure that any capital project commenced in the New York City area or anywhere else throughout the country, for which there are Federal funds provided, will receive a greater degree of project management oversight from UMTA than they have in the past.

And with that I will be glad to answer any questions that you may have.

Senator D'AMATO. Mr. Stanley, first of all, let me thank you for your cooperation, not only in this hearing, but in terms of helping us to secure needed discretionary funding for our mass transit programs here in New York. Oftentimes, you have been the whipping boy of those in Congress who have accused you of holding back the flow of Federal transit dollars. Let me clearly say that we should hold back Federal dollars, unless projects can demonstrate that they have proper construction management capabilities, and will make judicious use of taxpayers' dollars. We must never have another repetition of the kind of situation that we are talking about today.

So, Mr. Stanley, we welcome your support in this area, and we pledge to work with you in guaranteeing that future transit projects do not follow this example.

Let me ask you just one question: It seems to me that some very significant questions as to the CTL report have been raised. CTL stated to my staffers that they have not been furnished information relating to the kind of welds used on the beam, nor did they have the calculations for the kinds and extent of welds which should have been used to physically attach the additional steel to the sides of the web of the G–4 girder. CTL said that the information was about to be furnished to them by the Transit Authority. CTL further stated that they had not examined the as-built drawings for the beam. They said that they didn't know what kind of welds were used. Yet, in their final report, on page 15, they have reached a conclusion. They state:

> The modified girder G–4, in our opinion, has strength to support existing dead loads and design loads.

If CTL reached this conclusion without attempting to review information they admit they did not then have with respect to the welds and to perform the various calculations that were necessary, I would ask you to very carefully examine the CTL report. It seems to me that it raises more questions than it answers. I am not an engineer and I do not have the expertise to say whether or not that beam is safe. But, I want to tell you, based on what we have learned, I think a layman can say that as it pertains to the G–4 girder, CTL's conclusions were reached without resort to standard engineering practices. CTL's conclusions were not based upon known facts. I am wondering if they were simply trying to please a client?

I would ask that you have your technical people review the CTL final report, particularly in the area of the G–4 girder. For this Senator, it presents some very real and substantial questions. I don't believe that CTL's report is complete when it does not estimate the cost of making the necessary repairs, in terms of electrical systems and equipment that have been damaged, and when it indicates that the G–4 girder is structurally sound.

Are you in a position to indicate whether you will release additional Federal dollars for this project at this time?

Mr. STANLEY. At the present time we will not withdraw the suspension on Federal dollars for grants for this project. We will not do so until such time as we have thoroughly reviewed the initial report from CTL. Second, the critical issue is how much it will cost to repair some of the electrical equipment and the cost to bring that tunnel into operation. Again, the CTL report is silent on that question. And until such time as we have those two answers, I see no reason for us to withdraw the suspension on Federal funding for that project.

Senator D'AMATO. Congressman Green?

Mr. GREEN. In addition to the 63d Street tunnel where the incremental ridership is going to be so small that it is going to create a very serious problem in terms of operating costs for the MTA, we have had the recent opening of the Dade County Mass Transit System, where ridership is really pitiful. There are disputes still, I guess, as to the route of the Los Angeles system and what sort of ridership it can generate. In both those cases, I should make it clear that the Federal commitment to these came long before your watch at UMTA, but I am wondering what processes you have at the present time to look at that issue, as to whether these lines which people are seeking, all with inevitably very substantial Federal funding, whether they make any economic sense at all, understanding that mass transit will probably always operate at some deficit.

What procedures do you have to see that it is not as ludicrous as in the 63d Street case or in the Dade County case?

Mr. STANLEY. We are attempting to try to work very closely with the transit industry, particularly on new projects, to ask at the outset several very basic and very simple questions. One, what is the true cost of the project? I would be very naive to think that a number of the advocates of this projects do not like to tell the true cost at the outset, because there is not funding available to conclude the project. That is certainly the case in Miami. It is the case in Los Angeles. It is the case in Jacksonville. I can go on.

The second question we are asking is, What is the true patronage benefit? Because, after all, we have invested $43 billion in 20 years of the Federal Government being involved in mass transit. The investment is not, as Comptroller Regan said this morning, for votes. The investment happens to be for riders. And the true loss when at the outset of these projects transit officials do not confront the question of cost, the loss is to the riders and to the taxpayers.

I have looked back on 63d Street, looked back at what happened in Miami. It is very difficult for me to say that given that level of investment, the benefit was to the mass transit riders in the city of Miami, in Dade County, or given the level of investment in the 63d Street project, the incredible need in New York City for reinvestment in the subway system, that this was the most judicious use of funds.

We are attempting in the new-start area to come up with a set of criteria that outline questions like patronage and cost. And, again, even for the older rail cities, we are asking the same questions, not at the end of the capital project, when $600 million has been spent, but at the beginning of the projects, before they get started.

Mr. GREEN. Thank you, Mr. Chairman.

Senator D'AMATO. Thank you, Congressman Green.

Mr. Stanley, I would be very much interested in UMTA's appraisal of CTL's report, particularly as it relates to the G-4 girder, and pressing forth with a question as to how much for the rehabilitation of the work that has to be undertaken before they can either complete the 63d Street tunnel or see to it that there is no further deterioration. We are most appreciative of your efforts, not only on this project, but nationwide with respect to assuring that the Federal dollars are used wisely in all mass transit programs. Thank you very much.

Mr. STANLEY. Thank you.

[The statement follows:]

STATEMENT OF RALPH L. STANLEY, ADMINISTRATOR, URBAN MASS TRANSPORTATION ADMINISTRATION

Good morning Mr. Chairman and members of the Committee. I am pleased to have this opportunity to address the Committee today regarding various elements of the Metropolitan Transportation Authority's federally-funded program.

My testimony will focus on two principal issues -- first, delays in federally-funded capital projects at the Metropolitan Transportation Authority (MTA), and more specifically the New York City Transit Authority (TA). Following that, and more critical from the perspective of the Committee's inquiry into the MTA's New Routes Program, I will address the MTA's and the TA's management of federally-funded projects.

During a recent visit to New York, I expressed UMTA's concern about the level of Federal funds awarded to the TA which had not yet been committed to contract. This is a concern which UMTA has voiced in other areas of the country as well. As of mid-year, over $600 million in Federal funds which had been granted to the TA had not been committed to contract. These Federal funds have been awarded for a wide variety of capital improvement projects, including critical subway modernization and bus rehabilitation projects. To the extent that these funds are not expeditiously committed to contract, commuters are denied the transportation benefits they fully expect and deserve.

While UMTA is very concerned about the Federal funds which have not been put to contract, of equal concern are those federally-funded projects at the TA which, while initiated, have experienced significant delays in completion. These delays often result in cost overruns and, as is the case with uncommitted Federal dollars, denial of benefits to the commuting public. Examples of delays in the TA's federally-funded program include:

- Rehabilitation of the Boro Hall/ Court Street Station (26 months delay).

- Modernization of the Coney Island barn (22 months delay).

- Station lighting improvements on the Cross Town Line (33 months delay).

- The installation of a new police and train communications system (23 months delay).

I know that you, Mr. Chairman, have been particularly interested in the progress of the police and train radio system project for which $22 million in Federal funds was awarded in 1979. Combined with the severe delays in completing this project are quality control questions with regard to the police and train radios which UMTA is having the TA address to ensure that this project is implemented and serves its intended purpose.

It is UMTA's experience that delays in project implementation and completion are often caused by poor project management practices on the part of the grantee. In this regard, review of the MTA's New Routes Program -- specifically the 63rd Street Tunnel, Archer Avenue Subway and the 2nd Avenue Subway -- is important, not only because of the specific construction concerns which have been raised, but also, and perhaps more significantly, because of the more general issues raised concerning the TA's project management procedures. Therefore, while I will discuss these two New Routes projects for which over $900 million in Federal funds has been allocated, my comments are designed to address more broadly TA project management of all federally-funded projects.

The TA receives hundreds of millions of dollars each year for various subway and bus capital improvement projects. As the Chairman knows, the MTA's five year capital plan to rebuild New York City's transit system is funded, in part, by these Federal dollars. Given the magnitude of this program, it is essential that there be in place sound project management practices and procedures which will ensure that projects are advanced in an expenditious and fiscally prudent manner. Only in this way can the TA, its riders and the taxpayers get the biggest transit bang for the buck.

With this as a backdrop, I would like to turn to the 63rd Street project, its funding history, difficulties that have come about regarding the project and measures being taken to ensure that these problems are remedied. Next I will address the project management practices of the TA that have come to light as a result of the investigations into the 63rd Street tunnel. I will then discuss measures that UMTA feels are necessary to ensure that the TA improves its construction management practices. Finally, I will discuss administrative actions and legislative changes that could enable UMTA to more effectively oversee the project management activities of our grantees.

The 63rd Street line runs from Manhattan to the 21st Street Station in Queens. It extends two existing subway lines, which then merge under Central Park. The line continues along 63rd Street, tunnels under the East River, and ends in Queens. The tunnel has two levels: the upper to be used by the TA and the lower by the Long Island Rail Road. Construction on the line began in 1969, sixteen years ago, and a date for revenue service is uncertain at the present time.

The 63rd Street line was started with $103.4 million in city and State funds. In 1973, UMTA awarded the first Federal grant to the TA for the line. By December 16, 1981, UMTA had obligated total of $567.4 million to the TA for the project. Of these funds, $32 million was allocated for construction management. Similarly, UMTA awarded $337.5 million for the Archer Avenue Subway project in Queens, a new 2.5 mile four track, two level subway extension into Queens.

Most of the Federal funds available for the 63rd Street line already have been drawn down by the TA. However, as you know, effective July 22, 1985, I directed the TA not to draw down any of the funds remaining in the UMTA grants due to the questions that had been raised about construction problems on the line and the TA's project management practices. Since investigations revealed potential problems elsewhere in the New Routes Program, I also directed the TA, effective August 16, 1985, not to draw down any of the Federal funds remaining for the Archer Avenue and Second Avenue subway projects. Resumption of draw down is dependent upon completion and review of the independent assessment of the projects.

Although UMTA made periodic on-site inspections of the 63rd Street tunnel since 1973, the Regional Office primarily has relied upon quarterly progress reports from the TA to monitor the project. There were few if any indications of problems in these reports. Even the famous modification to the I-beam in Section 5(b) was reported in the quarterly reports only as a change order with no description of the nature of the change. However, after inspecting the tunnel in July of 1984, UMTA regional staff expressed to the TA its concerns regarding water leakage, cracks in the tunnel walls, stalactites hanging from the tunnel ceiling and other maintenance problems. UMTA raised this issue again with the TA in April of this year. Also in April, the Chairman toured the tunnel and raised his concerns. At that time, he requested that the TA have an independent review performed of leakage in the tunnel. The U.S. Department of Transportation Inspector General also initiated a review of the project in April.

By July, it was clear that there were potentially serious problems in the 63rd Street tunnel. Press reports described water leaks in the tunnel and resultant damage to equipment left in the tunnel. An interim report by the DOT IG suggested that the TA's construction management practices on the audited portion of the 63rd Street Tunnel were inadequate concerning frequency of concrete testing, necesary follow-up on reported concrete deficiences, and documentation of receipt and inspection of concrete. Accordingly, the DOT IG concluded that the structural integrity and/or useful life of that portion of the tunnel may have been adversely affected. This finding, which was later confirmed in the DOT IG's September 12, 1985 audit report, substantiated UMTA's earlier conclusion that there were sufficient questions about the construction of the tunnel to warrant suspension of the drawdown of Federal funds until those questions could be resolved.

My concerns regarding these related events were and are two-fold. First, I wanted to ensure that the specific problems on the 63rd Street Tunnel and other New Routes projects were addressed and remedied as necessary. Although some of the problems identified could turn out to be routine construction problems, the potential for serious difficulties was such that immediate follow-up was warranted. Moreover, the fact that the TA was not aware of the nature and extent of the problems was of great concern. My second concern was that this situation indicated a general inadequacy in the TA's construction management practices.

Such inadequacy could have serious implications for the TA's entire capital program. Accordingly, in June of 1985, the UMTA Regional Administrator renewed his year-old request that the TA provide his office with construction management plans for UMTA-funded projects and ensure that the personnel on the construction projects are qualified for their positions.

UMTA's progress meetings with the TA have consistently revealed problems with project and construction management. These management inadequacies have led to delays in the New Routes Program, which in turn have caused the difficulties on the 63rd Street tunnel that have recently come to light. Clearly, then, remedial efforts by the TA must be both project specific -- related to the 63rd Street tunnel -- and general -- that is, organizational in nature.

The TA has made efforts to address both of these concerns. In July, at UMTA's direction, the TA retained a consultant, Construction Technology Laboratories (CTL), to perform an evaluation of the structural integrity, durability, and water tightness of the tunnel. That contract, which is between the TA and CTL and paid with non-Federal funds, was later expanded to include the Second Avenue and Archers Avenue lines. CTL's final report on the 63rd Street line was issued this past Monday and we are in the process of reviewing its findings and recommendations and look forward to receiving the TA's analysis of the report.

As to the question of the TA's project management practices in general, the TA is in the process of making various changes. One element that has been sorely lacking is clearly identified, workable procedures which would implement a quality assurance plan, ensure quality control and help reduce delay. The TA is developing a Project Management Procedures Manual. This manual will, for example, outline procedures dealing with the frequency and manner of concrete inspection as well as protocols for dealing with failure of concrete, and better coordination between design and operations functions which have often been the source of delays and change orders of the TA. Over the past year, the TA has reorganized its Engineering and Construction Department under a program/project management structure, which is designed to ensure that there is an individual accountable for the management of each project. The Engineering Department is expanding its training program. This program should help the Department ensure that its employees have met all applicable job requirements. Finally, the Department plans to implement procedures to monitor the other elements of the plan to ensure compliance.

These changes, if carried out as planned, should help correct many of the deficiencies in the TA's project management practices. UMTA is looking forward to reviewing the TA's actual procedures and practices when they are adopted. UMTA plans to take strong measures to ensure that the TA's plans actually result in correction of its managerial problems. We will conduct a complete follow-up review once the TA has completed hiring its senior staff and has fully developed the plan's elements. This effort will incude a review of the TA's complete organization and procedures, as well as the status of the Construction Management Plan. Moreover, we will require that a project management plan be developed for each capital construction project before UMTA provides any funding. This will aid UMTA in determining that there is adequate, capable management of the projects. We will insist that the Vice-President and Chief Engineer be present at all progress meetings to ensure their awareness of the progress of all projects. Finally, we will closely monitor lagging projects and the TA's ability to close out projects.

The project management difficulties we discovered here and in other projects caused UMTA to take a serious look at the issue of what is the appropriate role for UMTA to play in construction management oversight of federally-funded projects. To assist the agency in determining what options are available to provide construction management oversight, a review was undertaken of the construction management procedures used by UMTA and other Federal agencies in large construction projects.

The critical issue is to define the role and interest the Federal Government has in overseeing construction projects, be they waste water treatment facilities, airport expansion activities, highways or mass transit construction. Our review of various federally-funded programs revealed that the examined Federal funding agencies were relatively consistent in the way they saw the Federal role. The local government which received the funding performed all direct and routine construction management functions. The Federal agencies endeavored to review the progress of the local governments to ensure that the Federal investment was being prudently managed. The agencies, for example, did not generally monitor day-to-day construction work. But they did review progress reports, budget documents, quality control records, and so forth, and conducted occasional site visits. The Federal agencies saw their role as oversight, not direct construction management.

In this connection we have concluded that it is important for UMTA to be able to independently monitor the oversight of significant projects. With the Chairman's support, we have been developing and are now implementing a national project management oversight program for major capital projects. Under this program, UMTA assigns independent consultants, paid for by UMTA or reporting only to UMTA to perform a project management oversight function of major capital projects that require more intensive oversight than normally would be conducted with our regional staff. I would note that both Senate and House versions of the pending FY 1986 DOT Appropriations Act would set aside a portion of the funds available under all of our capital programs for UMTA's use to contract directly with consultants for project management oversight.

We have also taken note of legislation to be introduced in the Senate by the Chairman which would greatly assist UMTA in its efforts. The legislation would require UMTA grantees to develop and implement strong construction management plans on major capital projects and would provide UMTA with the revenues and permanent authority to maintain an active oversight function in this area.

Mr. Chairman, on major capital projects, it is not only UMTA's policy to ask how much Federal money is being spent but, more importantly, whether that money is being spent prudently and consistent with sound financial principles. We are asking these questions on all major UMTA funded projects, not just the 63rd Street tunnel. As you know, we have also had bad experiences in Miami and Detroit on construction and construction management practices. As we are doing here in New York, we have attempted to resolve these problems by requiring the grantee, as a condition of further Federal assistance, to improve their project management practices.

We think that through your efforts and the expanded use of project management oversight contractors, we can avoid many of the problems we have experienced in the past.

That concludes my prepared statement. I wil be happy to answer any questions the Subcommittee may have.

SUBMITTED QUESTIONS

[The following questions were not asked at the hearing but were submitted for response for the record:]

QUESTIONS SUBMITTED FOR THE RECORD

UNCOMMITTED FUNDS

SENATOR D'AMATO: Mr. Stanley, you've mentioned in your testimony that hundreds of millions of Federal funds at the Transit Authority have not been committed to contract. Is there any trend in this area which you can determine? What is UMTA doing about this situation?

ANSWER. Of the $600 million I alluded to, $495 million or the majority represents funding made available in FY's 1982-84. This is of concern to UMTA. As the Transit Authority receives increased capital funding, which it has since enactment of the 1982 STAA, it is critical that it increase its capacity to commit and manage these Federal dollars.

UMTA is encouraging grantees to commit Federal dollars responsibly and expeditiously and is basing discretionary funding decisions on a grantees' ability to commit funds.

FUNDING DELAYS

SENATOR D'AMATO: Mr. Stanley, you have cited significant delays in federally-funded projects at the Transit Authority which is of great concern to me. These delays inevitably result in cost overruns and commuter frustration. What is UMTA doing to deal with this problem?

ANSWER: Looking at future funding, if significant delays occur for projects that have been provided UMTA funding, I will strongly consider not providing new funds to the agency for further projects until the delays are eliminated. In addition, I am now requesting that the Transit Authority and NYCTA submit expected advertisement and award schedules with their grant applications. Significant deviations from these schedules may result in UMTA's withdrawal of funding support for the project.

POLICE AND TRAIN RADIO

SENATOR D'AMATO: Mr. Stanley, one particular project which I have been concerned about and which I have discussed with you, is the installation of a new police and train radio system for which $22 million in Federal funds was awarded in 1979. What is the status of this project?

ANSWER: I know that you, Mr. Chairman, have been particularly interested in the progress of the police and train radio system project for which $22 million in Federal funds was awarded in 1979. Combined with the severe delays in completing this project are quality control questions with regard to the police and train radios. UMTA is having the Transit Authority address these questions to insure that this project is implemented and serves its intended purposes.

OVERSIGHT OF 63RD STREET TUNNEL

SENATOR D'AMATO: Turning to the 63rd Street Tunnel and the other New Routes Project, Mr. Stanley, the 63rd Street Tunnel Project has had a sixteen year history and has grown to an over $800 million project. It appears that every time the TA requested funds, it received Federal dollars with few questions asked. No one really has had a handle on the project. What oversight role did UMTA play during these years? What is UMTA doing to improve this oversight?

ANSWER: This project began initially in the late 60's without UMTA participation. Our first involvement began in 1973. At the time, the determination of financial, legal and technical capacity to carry out capital grant projects was a routine staff process which relied primarily on certifications and representations by the applicant agency.

In today's world, such a project would undergo the kinds of scrutiny that new starts and full funding contract programs undergo.

Our oversight of such projects consists largely of regular progress reviews with the client agency. These are usually carried out in the context of requests for payments under the grant contract, or in reviewing applications for grant amendments.

Our policy is to rely on the agency to provide the on-site project management. Our interest for the duration of a project is to assure that our funds are used properly, and that the project achieves the purposes it was designed to achieve.

I might note that our routine oversight role on this project has had material effects in addition to focusing on the specific issues that we are here to discuss today. Through our oversight role we have frequently disallowed inappropriate costs, assured the opening of the Lexington Avenue Station, and worked with the Transit Authority to resolve other project issues.

We must recognize, however, that the degree of project oversight which we are able to carry out is very general, in keeping with our policy of placing the primary responsibility for project management on the operating authority.

MAINTENANCE

SENATOR D'AMATO: Mr. Stanley, a chronic project management problem, illustrated by a series of internal memoranda on the 63rd Street Tunnel Project, deals with maintenance of the project. Specifically, as sections of the tunnel were completed, no one seemed to be maintaining the sections or equipment in these sections. That's a good part of the reason why we have corroded equipment and beams in the tunnel. In 1983, UMTA informed the Transit Authority that it would not fund maintenance. Can you elaborate on this? Is this UMTA's current policy?

ANSWER: UMTA does not pay for maintenance in a capital project. Maintenance is an operating expense. Contracts for providing support equipment should be properly sequenced to minimize the time required to maintain the facility and equipment before service is initiated. The payments of maintenance expenses under the capital program can lead to the stretching out of the construction schedule as the grantee does not want to lose his "free ride," which would occur when service commences. Therefore, we feel that this policy is prudent in that it provides an incentive to the grantee to complete the project.

SUSPENSION OF DRAWDOWNS

SENATOR D'AMATO: Did the MTA stop drawing down on the projects when directed to do so?

ANSWER: No, notwithstanding the clarity of our letter to MTA about this, apparently there was some misunderstanding and monies continued to be drawn down. We notified the MTA of this and received a check for these drawdowns.

FUTURE FUNDING OF NEW ROUTES PROJECT

SENATOR D'AMATO: Mr. Stanley, now that the CTL report has been issued, what is UMTA's position with regard to funding of the New Routes Project?

ANSWER: We are in the process of reviewing the CTL report and recommendations regarding the 63rd Street Tunnel and understand that the report on Archer Avenue and Second Avenue will be issued soon.

Before we make any funding decisions, however, we must have the TA's analysis of the report, know precisely what remedial action is necessary, how much it would cost and the timing and oversight for the remedial action. We also need to discuss with the Transit Authority what they see as the future of this project.

QUARTERLY REPORTS

SENATOR D'AMATO: Mr. Stanley, the quarterly reports that you've mentioned in your testimony appeared too routine in that no significant problems or delays werre reported to UMTA. For example, the cut-beam was not reported while this would appear to be a significant event. Are you satisfied with these reports and if not, what is UMTA doing to improve the reporting so that you have a better sense of these major projects?

ANSWER: UMTA circulars and policy require quarterly reporting on capital projects. In addition, we require grantees to report significant events and delays during the life of the project. Clearly, this did not happen on the 63red Street Tunnel Project. We are looking very carefully at a reformatting of the reports as well as the grantee's internal reporting requirements to ensure that the grantees' project managers reflect what is actually happening on these projects.

TECHNICAL CAPACITY

SENATOR D'AMATO: Mr. Stanley, the UMT Act requires all recipients of Federal funds to have the technical capacity with which to undertake those capital projects. I assume that a critical element of technical capacity is sound construction management practices designed to ensure the timely and cost-effective implementation of capital projects. 1) What is technical capacity? 2) What needs to be done at the Transit Authority to improve its technical capacity? The Transit Authority is developing pre-construction management procedures now. Have you reviewed that? Will it enhance technical capacity?

ANSWER: 1) We have defined adequate technical capacity to mean that the grantee have sufficient personnel, management systems, project controls, and engineering and construction management resources to accomplish the planning, design, construction and operation of transit projects on-time, within budget, and in conformance with specified design and performance criteria.

2) Over the past year, the Transit Authority has been reorganizing its Engineering and Construction Department to function in a program/project management structure. The primary purpose of this change is to assure that a single individual -- the Project Manager -- is responsible for managing and monitoring all activities throughout the planning, design, and construction phases. Our Regional Office has received information that many other organizational and procedural changes are being implemented by the Transit Authority to enhance and improve their ability to manage and control their capital projects. Among these are:

a) An increase in the number of deputy vice presidents for greater senior management attention afforded to special projects.

b) The establishment of a Director of Quality Assurance to systematically implement programmatic requirements, management controls, inspections, work and performance audits, etc.

c) A consolidation of project support services required by project managers including cost schedule control systems, reporting mechanisms, and a separate, dedicated cost estimating department.

Additional detailed information concerning these and other management initiatives of the Tranist Authority have been provided to and reviewed by our Region II office, including their three volume Project Management Procedures Manual. Implementation/enaction of these procedures is underway. I believe these initiatives are improving the Transit Authority' technical capacity and the resolution of problems they/we have recognized.

CONSTRUCTION MANAGEMENT

SENATOR D'AMATO: Mr. Stanley, you mentioned in your testimony that UMTA requested in July 1984 construction management plans for those federally funded projects. I guess a good question is why it took over a year, but that's water under the bridge at this point. What precipitated UMTA's request at that time? Have you reviewed the plans? Your reaction?

ANSWER: In June 1984, there was a major derailment on the Joralemon Street river tunnel of the Brooklyn IRT. This accident occurred only a few hours after new track was improperly laid as part of an UMTA-funded project. The follow-up NTSB hearings uncovered that the Transit Authority inspector was unqualified. There should have been a track inspector on the job, but an electrical inspector was used instead. The hearing also brought to light that due to a shortage of field engineers and inspectors the Transit Authority was putting unqualified people out in the field to manage projects. This precipitated UMTA's request.

The Transit Authority has provided us with construction management plans for all active projects funded by UMTA, as well as 27 new standard operating procedures. We have reviewed the management plans for the projects for which we are about to provide funding.

We have found that the Transit Authority has made an honest and concerted effort to identify the positions and procedures necessary to adequately manage the projects. It has been found to be a tremendous learning experience for many of the Transit Authority's senior people who are not previously required to go through this exercise.

Nevertheless, we are concerned about the competency of the field engineers and inspectors that will fill these positions and their ability to follow these procedures. Therefore, we have requested that the Transit Authority provide to us the names and qualifications of the people assigned to a project prior to award of the construction contract.

SENATOR D'AMATO: Mr. Stanley, in your testimony you've described what you see as UMTA's role in overseeing capital projects undertaken by UMTA grantees, be they transit operators, States or localities. As I understand it, from your testimony, the project management function will reside with the grantee. UMTA will play a more active role in overseeing project management through the use of project management oversight firms. UMTA has used project management oversight consultants on a selected basis in certian cities. Have these been successful?

ANSWER: We currently have oversight consultants on rail construction projects in Miami, Detroit, San Jose, and Sacramento. Our experience with this concept, which has been evolving since the construction problems in Miami two years ago, has been very good. The consultants played a key role in assisting us in turning around a difficult situation in Miami and are now trying to do the same in Detroit, while in San Jose and Sacremento we are in a preventive mode.

SENATOR D'AMATO: What precisely will be the project management oversight firm's authority on any given project? If there is a project management problem, how will it be addressed?

ANSWER: As an adjunct to the Regional Offices, the PMO firm will act as UMTA's eyes and ears. The PMO will advise the UMTA Regional Office of any problems and the UMTA Regional Office will then take the appropriate actions with the grantee.

The oversight firm's job is clearly only to monitor the grantee's activities and progress and report any issues or problems to UMTA. UMTA will then decide if there is a problem and deal with the grantee.

The tasks the PMO will perform include reviewing project management documents, observing construction activities, interviewing personnel, examining records and test data, and holding progress meetings. The project management documents to be reviewed will include project management plans, budget controls, schedule controls, change-order procedures, quality control plan, quality assurance plan, procurement, and construction schedules.

The PMO will be used to ensure that the Project is on time, within budget, in conformance with design criteria, constructed to approved plans, and specifications and is efficiently and effectively implemented.

SENATOR D'AMATO: It seems to me that Project Management Oversight firms will not be the total answer. That is, the UMTA organization must have the resources to deal with managing a multi-million yearly program. Are the field offices equipped to adequately oversee this massive capital program?

ANSWER: We are currently reviewing our field office structure, staffing and workload. We have not completed our analysis or reached any conclusions as yet but the result may be that some minor movement or addition to field engineering staff resources may be appropriate to fit the workload of major projects. Clearly, we see the consulting firms being our key eyes and ears providing the expertise where and when we need it.

SENATOR D'AMATO: Mr. Stanley, I will introduce legislation shortly which authorizes the Secretary to require that construction management plans be in place at the outset for major federally funded projects. What's your reaction to this?

ANSWER: This is something we are now getting into administratively, to ensure that more specific construction management procedures are in place up front to avoid problems later. Statutory language in this area would give our efforts more emphasis and force.

SENATOR D'AMATO: As a follow-up, I anticipate that these construction management plans will be reviewed by UMTA. Does UMTA have the resources and expertise to handle this function?

ANSWER: We believe that the consulting firms which we are now hiring are the best way to supplement existing UMTA staff to provide the level of expertise needed to review grantees' construction management plans and activities.

SENATOR D'AMATO: Mr. Stanley, the Federal Government generaly funds 75-80 percent of transit capital projects with the 20-25 percent share coming from the State or local government. What role do you see for State and local govenments to assist in overseeing the implementation of capital projects?

ANSWER: In some cases, particularly where a State is a major financial participant, as in the Buffalo Light Rail project, states have assisted in overseeeing the implementation of capital projects. In addition, we are aware that the Environmental Protection Agency uses State agencies extensively in overseeing local construction projects. This is an area that we may look into further.

Office of Inspector General

STATEMENT OF JOSEPH WELSCH, INSPECTOR GENERAL, DEPARTMENT OF TRANSPORTATION

Senator D'Amato. The next witness is Mr. Joseph Welsch, the Inspector General of the U.S. Department of Transportation.

Mr. Welsch. Mr. Chairman, members of the subcommittee, I am pleased to appear before you today to discuss the New York Metropolitan Transportation Authority New Routes Program, particularly the 63d Street subway project.

We have issued audit reports on the quality of construction of the Archer Avenue and 63d Street lines, the adequacy of consultant services at the New York City Transit Authority, selected aspects of the MTA's Rail Modernization Program, and the Urban Mass Transportation Administration's project management activities at the NYCTA and other grantees. We are currently reviewing construction management activities on the Archer Avenue line of the New Routes Program. The review will focus on the receipt, placement, and testing of concrete, and on the quality of welded rail used on two sections of the line. I will comment this morning primarily on our recent audit of the quality of construction at the NYCTA and then briefly on the other audits.

Mr. Chairman, I will just summarize briefly and enter the statement in the record.

Senator D'Amato. Fine.

Mr. Welsch. Our review included section 4 of the Archer Avenue line and section 5b of the 63d Street line. Both of these sections were selected because the inspection function was performed entirely by the NYCTA personnel, rather than the contractors. In summary, our findings indicate there was gross, inadequate oversight of the testing and placing of concrete in both of these sections.

AUDIT TIME PERIOD

Senator D'Amato. May I just ask you one question? What period of time did your audit cover?

Mr. Welsch. Our audit was started in April 1985. We issued the final report in September and we reviewed records from February 1977 to the present, during the audit period.

Senator D'Amato. Quite an extensive audit, then?

Mr. Welsch. Yes; we covered the entire period and reviewed all of the records as far as the pours at both section 4 at Archer Avenue and section 5b of the 63d Street line.

AUDIT FINDINGS

As I indicated, we found gross deficiencies in the inspection and oversight by the NYCTA personnel in the pours in these sections, and lack of documentation to support some of the receipt of the concrete in the sections. They were not performing tests in accordance with industry standards. There was a misunderstanding within the NYCTA as to the required number of tests to be performed. They were not performed on the industry standard or the standards prescribed within the NYCTA.

In view of the problems revealed by the audit, we recommended that the UMTA Regional Administrator require NYCTA to obtain a comprehensive technical evaluation and inspection of both the 63d Street and Archer Avenue lines, to assure their structural integrity and identify any remedial action; establish an implementing system for prompt followup on concrete test results which indicate deficiencies; and implement procedures that will provide accurate and complete documentation of concrete receipt and inspection. UMTA agreed with the findings and recommendations and has initiated corrective action.

In another audit we have found that consultant designs for construction projects frequently contain errors and/or omissions that necessitated additional work orders on the construction contracts, as well as supplemental agreements on consultant contracts. As a result, we have identified $525,000 representing escalation costs which were not eligible for Federal participation. The design errors and/or omissions also caused significant project delays. UMTA agreed with the findings and recommendations and has obtained appropriate credits and identified those costs which are not eligible for Federal participation.

We also performed an audit of selected aspects of the MTA Rail Modernization Program to evaluate such grant management activities as project monitoring, procurement, and reporting of program income. We found that program income of approximately $1,900,000 and interest income of $755,000 earned on the proceeds from the sale of scrap rail and other track materials was not properly accounted for, reported, or credited to the UMTA grant.

In another audit we found that the grantees did not advise UMTA of sold, leased, or otherwise removed federally funded buses, subway cars, and rail cars for mass transit operations. As a result, UMTA did not receive its $4 million share of the credit. In addition, UMTA had not terminated a $43 million grant project, the Second Avenue subway, although the NYCTA had, in our opinion, effectively abandoned the project in 1975. UMTA has required the grantee to earmark the unexpended funds for pending legal disputes.

So, in summary, Mr. Chairman, we feel that there were many inadequate and inefficient practices in the monitoring of these particular Federal grant programs, but we do believe that there are remedial actions in process by UMTA, MTA, and the NYCTA.

[The statement follows:]

STATEMENT OF JOSEPH P. WELSCH, INSPECTOR GENERAL, DEPARTMENT OF TRANSPORTATION

Mr. Chairman and members of the subcommittee, I am pleased to appear before you today to discuss the New York Metropolitan Transportation Authority (MTA) New Routes Program particularly the 63rd Street Subway Project.

In the past, we have issued audit reports on the quality of construction of the Archer Avenue and 63rd Street Lines, the adequacy of consultant services at the New York City Transit Authority (NYCTA), selected aspects of the MTA's rail modernization program, and the Urban Mass Transportation Administration's (UMTA) project management activities at the NYCTA and another grantee. We are currently reviewing construction management activities on the Archer Avenue Line of the New Routes Program. The review will focus on the receipt, placement, and testing of concrete, and on the quality of welded rail used on two sections of the line. I will comment primarily on our recent audit of the quality of construction at the NYCTA and more generally on the other audits.

Quality of Construction, NYCTA

We started the audit on April 5, 1985 and advised UMTA Region II of our objective to evaluate the NYCTA's construction management practices for controlling the receipt, testing, and placement of concrete on the Archer Avenue and 63rd Street Lines. We kept UMTA abreast of our results throughout the audit and provided them with a draft audit report on July 26, 1985. After release of the draft report, we met with the MTA Inspector General and provided him with background information on our review and the New Routes Program. We have also furnished information to the Inspector General for investigative followup and have been assisting local law enforcement agencies as well. The final audit report with UMTA's comments to the draft was issued on September 12, 1985.

Our review included Section 4 of the Archer Avenue Line and Section 5b of the 63rd Street Line. Both sections were selected because the inspection function was performed entirely by NYCTA personnel rather than contractors. We reviewed project documents from February 1977 to the present, including concrete records, files, reports, and supporting documentation at two field construction offices. Our review disclosed weaknesses in concrete testing, followup on test results, and documentation for the receipt and placement of concrete at the two project sections.

The NYCTA's manual, entitled Information and Instructions For Personnel Assigned to Inspection Work in the Construction Division, specifies how concrete is to be tested but does not establish requirements for the frequency of such tests. Discussions with NYCTA field officials disclosed that testing of concrete on the two project sections reviewed was performed at the discretion of the project engineers. However, NYCTA management officials were unaware of the actual testing procedures followed by the field personnel. The Assistant Vice President of the Engineering Division stated that concrete testing was being performed every 50 cubic yards in accordance with the New York City Building Code. Officials of the NYCTA's Material Testing Division advised us that such testing should be performed every 150 cubic yards in accordance with standards of the American Society of Testing and Materials (ASTM).

Overall, 81,510 cubic yards of concrete were to be poured at Section 4 (Archer Avenue) and 111,251 cubic yards at Section 5b (63rd Street). Our analysis showed that the NYCTA's testing in the two project sections was significantly below the ASTM industry standard. It performed an average of one strength test for every 296 cubic yards of concrete poured on Section 5b of the 63rd Street Project. Average testing for Section 4 of the Archer Avenue Project was one strength test for every 1,455 cubic yards.

The ASTM standards also require that on each day concrete is delivered, at least one strength test is to be taken for each class of concrete. We found that the NYCTA's records for the testing of the two project sections reviewed showed that the testing was significantly below the industry standard. For example, on Section 4 (Archer Avenue), strength tests were made on only 43 of 774 days on which concrete was poured, and on Section 5b (63rd Street), required tests were made on only 308 of 724 days on which concrete was poured.

Our review of NYCTA records disclosed that field personnel were instructed in an August 18, 1976 internal memorandum to perform strength tests on at least every 60 cubic yards of concrete delivered when such concrete had not been inspected at the batch plant. We found that 2,044 cubic yards of concrete, not inspected at the batch plant, were delivered to the two sections (Archer Avenue - 1,494 cubic yards; 63rd Street - 550 cubic yards) and were not tested by the NYCTA at the project site.

The importance of testing concrete is evidenced by the number of instances in which the concrete failed when it was tested. The NYCTA's concrete test reports showed that at Section 4 of the Archer Avenue Line the concrete in 13 of 56 strength tests (23 percent) did not meet construction specifications. Further review of the NYCTA's records revealed that no followup action was taken to determine whether any remedial work was necessary to correct the deficiencies disclosed by 10 of the 13 tests that failed.

The concrete delivery ticket (TA #58-63-0260) is a two-sided document which is used to indicate that the NYCTA inspected the concrete at the batch plant, and received and inspected it at the job site. Each side is required to be filled out and signed by an NYCTA inspector. We found that there were 6,062 concrete delivery tickets indicating that 81,510 cubic yards of concrete left the batch plant assigned to Section 4 of the Archer Avenue Line. Our review disclosed that 3,554 tickets, representing 48,230 cubic yards of concrete were not filled out and signed by the NYCTA inspector at the delivery site. Therefore, the NYCTA's documentation could not support whether the 48,230 cubic yards were actually delivered, inspected, and properly placed.

Furthermore, the NYCTA's records reported that 56 concrete tests were taken. However, in 27 instances, we could not locate concrete tickets to verify that the concrete was received and placed. We were able to verify 14 of these instances through inspectors' daily reports. For the remaining 13 tests, inspectors' reports were missing for 7 and there was no indication that pours took place for the 6 other tests.

In view of the problems revealed by the audit, we recommended that the UMTA Regional Administrator require NYCTA to:

- Obtain a comprehensive technical evaluation and inspection of both the 63rd Street and Archer Avenue Lines to ensure their structural integrity and identify any required remedial action.
- Establish and implement a system for prompt followup on concrete test results which indicate deficiencies.
- Implement procedures that will provide accurate and complete documentation of concrete receipt and inspection.

UMTA agreed with the finding and recommendations and has initiated corrective action. In addition, UMTA plans to monitor the performance of recommended reconstruction work and has stated that it will not fund costs for the inspection, tests, plans, specifications, or construction work in progress or soon to be initiated to remedy potential construction deficiencies.

The audit also showed that the Long Island Railroad (LIRR) retaining wall, a part of the Archer Avenue Line (Section 4), has areas with shallow reinforcing steel and, in one place, the concrete is cracked and displaced. We found that the NYCTA's inspection activities were not adequate to identify these construction deficiencies and recommended corrective action. As a result, the appearance, maintainability, and useful life of the structure may be impaired. Furthermore, the concrete in these areas may fall to an adjacent sidewalk creating a public safety hazard.

Other Audit Disclosures

We performed an audit to evaluate the economy, efficiency, and effectiveness of consultant services on NYCTA rehabilitation projects. We found that consultant designs for construction projects frequently contained errors and/or omissions which necessitated additional work orders (AWO) on the construction contracts as well as supplemental agreements on consultant contracts. As a result, $3 million of AWO costs, which would have been included in the original construction contracts had the designs been properly prepared and reviewed, were not subjected to the competitive bid process which may have resulted in lower prices. In addition, we identified $525,000 representing escalation costs which were not eligible for Federal participation. The design errors and/or omissions also caused significant project delays. UMTA agreed with the findings and recommendations and has obtained appropriate credits and identified those costs which are not eligible for Federal participation. (The projects reviewed on the audit were rehabilitation projects and were not related to the New Routes Program.) (Audit Report No. R2-UM-5-029, dated March 13, 1985.)

We made an audit of selected aspects of the Metropolitan Transportation Authority's (MTA) Rail Modernization Program to evaluate such grant management activities as project monitoring, procurement, and reporting of program income. We found that program income of approximately $1.9 million and interest income of $755,000 earned on the proceeds from the sale of scrap rail and other track materials was not properly accounted for, reported, or credited to the appropriate UMTA grant. As a result, the revenues were not available for use in funding other transportation programs or reducing project costs, and the Treasury incurred additional borrowing costs of approximately $755,000. UMTA generally agreed with the findings and recommended corrective actions, and is in the process of obtaining appropriate credits from the grantees. (Audit Report No. R2-UM-5-021, dated February 4, 1985.)

We audited UMTA Region II's project management activities to determine whether selected aspects of its programs were being managed effectively and efficiently. The audit was performed at two major grantees including the NYCTA. We found that the grantees did not advise UMTA of sold, leased, or otherwise removed federally funded buses, subway cars, and rail cars for mass transit operations. As a result, UMTA did not receive its $4 million share of the project credits. In addition, UMTA had not terminated a $43 million grant project, the Second Avenue Subway, although the NYCTA, in our opinion, had effectively abandoned the project in 1975. UMTA has required the grantee to earmark the unexpended funds for pending legal disputes. (Audit Report No. R2-UM-3-056, dated April 15, 1983.)

Summary

Our audit reports have revealed significant problems in managing both the New Routes Program and other federally funded programs. However, UMTA, as well as the MTA have been responsive in implementing the corrective actions. This concludes my statement. I will be happy to answer any questions the subcommittee may have.

NEED FOR ADDITIONAL AUDITS

Senator D'AMATO. First of all, let me commend you for your vigilance in this area. You rocked the boat, and that is what you should be doing when it is necessary. Also, you have called for the kind of remedial steps that I think are absolutely appropriate. It is not good enough just to point out deficiencies, work must be done to correct those deficiencies.

In terms of your audits, I am going to request that you perform another audit on aspects of the projects not covered by the audits that you have indicated, for the equipment and mechanical elements. I am wondering if you might undertake this initiative? It seems to be a very real question.

OVERSIGHT ABILITY

You performed an audit with respect to the MTA's oversight ability with respect to design consultants. You spoke about that briefly. Would you care to elaborate?

Mr. WELSCH. Some of the examples we have, Mr. Chairman, indicated that there was inadequate review by the NYCTA engineering staff over the consultant design work. This resulted in additional work orders being required to remedy situations which should have been addressed by the consultant and certainly picked up in an initial oversight by engineers in the authority.

Senator D'AMATO. I must say, in fairness to the contractors who have spoken to me, that the issue has been raised with this Senator that contractors frequently run into problems of inadequate design and modifications that were requested without proper engineering. These problems, to paraphrase their expression, made it absolutely impossible for them to conduct their work. Is that claim, would you say, justifiable?

Mr. WELSCH. I do not have all of the information that they might have had. We did find examples where engineering drawings and prior records which were needed by consultants in order to do a current design were not fully complete nor adequate. Therefore, it was difficult, if not part of the reason for some of the inadequate designs being put forth by the consultants and engineers hired.

Senator D'AMATO. Consequently, if one is on the job site with inadequate drawings, et cetera, what kind of problem, if any, would that present to the actual contractors?

Mr. WELSCH. It certainly would put them at a disadvantage not knowing about the subsoil or, perhaps, if they did not run enough subsoil tests, or if the subsoil records were incomplete, or the engineering drawings did not show all of the subterranean utilities or other things, that would result in additional costs.

Senator D'AMATO. Would that then lead to a possibility of substantial cost increases over original estimates as jobs proceed and run into the kinds of problems you described?

Mr. WELSCH. Yes, in many cases it would. In some cases where we felt it was the consultant's fault, we recommended no Federal participation in that portion of the cost overrun.

NYCTA IN-HOUSE DESIGN

Senator D'AMATO. I am wondering, did you have an opportunity to review the performance of the TA's own in-house design?

Mr. WELSCH. I do not believe we have completed the analysis. We do have a job scheduled in that area, but it has not been started yet.

Senator D'AMATO. I think that would be most appropriate, particularly in light of the fact that the MTA has a massive $8 billion-plus capital construction program. I would like to gain insight into the MTA's capabilities with respect to handling this program. What are they doing now that should be addressed? We are talking about substantial sums of money, and I am fearful that we are going to have repetitions, maybe not on this grand a scale, in other areas. It seems to me that there is nothing to assure us that that is not going to happen.

Of course I understand that the TA and the MTA are attempting to improve their construction management procedures, but I think it would be an area of appropriate review by your office. I am wondering if you would let us know when you undertake such a review, and please furnish us with the results? The committee would be very appreciative.

Mr. WELSCH. We will, Mr. Chairman.

SUBMITTED QUESTIONS

Senator D'AMATO. I have a number of other technical questions which I am going to ask if you would please answer in writing for the record. Let me commend you for your vigilance. I think you have done an outstanding job.

Mr. WELSCH. Thank you, Mr. Chairman.

[The following questions were not asked at the hearing but were submitted for response for the record:]

QUESTIONS SUBMITTED BY SENATOR D'AMATO

NEW YORK CITY TRANSIT AUTHORITY

SENATOR D'AMATO: In September, your office completed an audit regarding the quality of construction at the New York City Transit Authority. This audit covered the TA's construction management practices with respect to concrete at Section 5B of the 63rd Street Tunnel and Section 4 of the Archer Avenue Subway Project. I commend you for undertaking that effort. At this time I also request that you perform another audit on aspects of the projects not covered by this audit, e.g., Equipment and Mechanical Elements).

What did your audit reveal?

ANSWER: On September 12, 1985 we issued Report No. R2-UM-5-064 on the Quality of Construction at the TA. This report dealt with the TA's construction management practices for controlling the receipt, placement, and testing of concrete at Section 5b of the 63rd Street Subway and Section 4 of the Archer Avenue Subway. Our review disclosed that the TA's construction management practices at these sections were inadequate. The TA's frequency of testing nearly 200,000 cubic yards of poured concrete was not in accordance with industry standards; and the TA did not adequately follow-up on strength tests that disclosed concrete deficiencies. In addition, documentation was not prepared for the receipt of more than 48,000 cubic yards of concrete. As a result, there was no assurance that the concrete at the two sections was within construction specifications; and the structural integrity and/or useful life of the sections may have been adversely affected.

We also found areas of the Long Island Railroad retaining wall at Archer Avenue where there was shallow reinforcing steel and one location where the concrete was cracked. As a result, the appearance, maintainability, and useful life of the structure may have been impaired. Furthermore, a safety hazard for pedestrians using the adjacent sidewalk may have existed.

During our review we were informed of a TA design error that necessitated the modification of an "I-Beam" on the 63rd Street Line because it obstructed the passage of trains. However, the safety and reliability of the modified beam had not yet been determined at the time of our review.

SENATOR D'AMATO: What recommendations did your audit present to UMTA?

ANSWER: We recommended and the UMTA Regional Administrator agreed to require the TA to:

-- Obtain a comprehensive technical evaluation and inspection of the 63rd Street Project, including the modified "I-Beam", and the Archer Avenue Project to ensure their structural integrity and identify any required remedial action.

-- Establish and implement a system for prompt follow-up on concrete test results which indicate deficiencies.

-- Implement procedures that will provide accurate and complete documentation of concrete receipt and inspection.

-- Determine the extent of the shallow reinforcing steel and take immediate action to correct the construction deficiencies in the Long Island Railroad retaining wall.

MTA'S OVERSIGHT ABILITY

SENATOR D'AMATO: I understand that you have also performed an audit on the MTA's Oversight Ability with respect to design consultants. Will you tell the Committee the findings of that audit?

ANSWER: On March 13, 1985 we issued Report No. R2-UM-5-029 on our audit of Consultant Services at the TA. The audit disclosed that consultant designs for TA construction projects frequently contained errors and/or omissions. This necessitated additional agreements on consultant contracts, the cost of which significantly increased Federal expenditures. Furthermore, the additional work caused significant delays in numerous projects. We attributed this situation to: (i) the TA's inadequate review of consultant designs; (ii) the consultants' incomplete field inspections prior to design preparation; (iii) the lack of coordination between the consultants, facility users, and utilities and other services; and (iv) the lack of provisions in consultant contracts for assessing appropriate sanctions and penalties for inadequate performance. We found at least $525,000 representing the escalated cost of the additional work as well as $3 million of such work which would have been included in the original construction contracts had the designs been properly prepared and reviewed. In addition, this effort would have been subjected to the competitive bid process and may have resulted in lower overall prices. UMTA agreed with our findings and agreed to take corrective actions.

NONDEPARTMENTAL WITNESSES

New York Metropolitan Transportation Authority

STATEMENT OF SANFORD E. RUSSELL, INSPECTOR GENERAL

Senator D'Amato. Our next witness is MTA Inspector General Sanford Russell.

Senator D'Amato. Your statement will be received in the record as if read in its entirety.

Mr. Russell. OK. I just want to read part of it and then go to questioning, if it is all right with you.

Senator D'Amato. Certainly.

Mr. Russell. First, let me tell you something about my office. The MTA Inspector General's office was created——

Senator D'Amato. You don't make many people happy.

Mr. Russell. I don't expect to. It is part of the life of an inspector general.

We were created in 1983 by the Governor and the legislature to be an independent watchdog over the MTA and all its agencies. I was appointed by Governor Cuomo and confirmed by the State Senate and report to them rather than to the MTA chairman. That has created some difficulties in the past on our relationship, but I think we have overcome that and we work pretty well.

Senator D'Amato. Good.

Mr. Russell. Among my responsibilities are auditing the performance of all MTA agencies, as well as investigating fraud and abuse throughout the transportation system. As you are aware, I have begun an investigation into the 63d Street and Archer Avenue tunnels. I am examining such aspects of the two projects as fraud, bid rigging, safety of the tunnel, and how the MTA wound up with the situation, to begin with. We will report on these as the work is completed.

In my 2 years with this office, and especially since I became inspector general at the beginning of this year, I have come to understand that problems, such as those being examined today, can best be understood in the larger context of how the MTA and the Transit Authority conduct their business.

It is clear that many projects have been poorly planned and designed. Contracts have been awarded based upon unrealistic cost estimates and without putting proper controls in place to manage them adequately. Engineering reviews of questionable thoroughness and value fail to provide adequate quality control. Vulnerability to bid rigging and fraud has been and still is endemic.

These and other problems have been highlighted not only by my agency, but by the State comptroller and other agencies that look over, the city comptroller, and even their own management consultants.

We have focused, as you know, a number of our reports on the management of the $8.5 billion capital program. And, of course, I will provide you with copies of those reports; they are long and involved and they repeat many of the things the State comptroller found and many of the things the others have found. They have been making improvements. They have been putting in the project management system. I am sure Mr. Kiley and Mr. Gunn will tell you about that, but serious problems will remain for quite a while, because this is going to be a slow process, it is not a quick one. But the ultimate result of all of these changes is still problematical. I think in some cases a more drastic organizational solution has to be achieved.

I am glad to hear about your legislation. I think it will require a rethinking within, not only the agency, but within the State, of how these projects of such massive construction programs, are managed.

When you look back at what happened when the State went into its $8 million capital construction program, you notice that the response to it, especially in the Transit Authority, but in the other two railroads also, was not to beef up their staff with competent people. They looked at it as only a temporary aberration, and they hired consultants and consultants. And then they had to hire a consultant to manage the other consultants. To Mr. Gunn and Kiley's credit, that was the first thing they eliminated when they came into the authority.

So I think when you look at the way they responded originally to such a massive program, you see that enough real thought was never given to this. This $8.5 billion program is only the start, as you know. To really do something, and complete the renovation of this agency, and all the infrastructure, another $8.5 billion, at least, is going to be required over the next 20 years or less. And unless they put into a place some kind of management system for a management unit, because it is not restricted to the Transit Authority, that is the major part of it, but the Metro North and the Long Island Railroad have exhibited the same problems. Therefore, I think they have to look at it as a whole. And that is what I would be discussing and I will be discussing with the Division of the Budget and others, on the things that we have found and some of our ideas on what they can do about it.

I have some horrible examples I can give you of what has gone on, but I think you can read that in my reports, and I am ready for questions at any time, Senator.

[The statement follows:]

STATEMENT OF SANFORD E. RUSSELL

Thank you for inviting me to testify at this hearing today.

First, let me tell you something about my office. The MTA Inspector General's office was created in 1983 by the Governor and the legislature to be an independent watchdog over the MTA and all its agencies. I was appointed by Governor Cuomo and confirmed by the Senate, and report to them rather than to MTA Chairman Robert Kiley.

Among my responsibilities are auditing the performance of all MTA agencies, as well as investigating fraud and abuse throughout the transportation system.

As you may be aware, I have begun an investigation into the 63d Street and Archer Avenue tunnels. I am examining such aspects of the two projects as fraud, bid rigging, safety, and how the MTA wound up in this situation. We will report on these issues when our work is completed.

In my 2 years with this office, and especially since I became inspector general early this year, I have come to understand that problems such as those being examined here today can best be understood in the larger context of how the MTA and the Transit Authority conduct their business.

It is clear that many projects have been poorly planned and designed. Contracts have been awarded based upon unrealistic cost estimates, and without putting proper controls in place to manage them adequately. Engineering reviews of questionable thoroughness and value failed to provide adequate quality control. Vulnerability to bid rigging and fraud has been and still is endemic.

These and other problems have been highlighted in reports issued by numerous governmental agencies, as well as those issued by private consultants hired by the MTA. A number of our reports which focus on the management of the $8.5 billion, 5-year capital program have also addressed many of these problems. I would be happy to provide copies of these reports to the members of the committee.

Although both the MTA and TA have begun making numerous management and administrative changes since Robert Kiley and David Gunn came here almost 2 years ago, serious problems still persist. The ultimate result of these changes remains to be seen.

The 63d Street and Archer Avenue tunnels might best be viewed as case studies which have demonstrated the problems which plagued the MTA system from its inception. Until these problems and others the public may not have been made so dramatically aware of are solved, situations such as those you are examining today will, unfortunately for the millions of people who rely upon public transportation, continue to occur.

Senator D'AMATO. Well, Mr. Russell, let me say at this point that you have really touched, in your brief synopsis, on the essential elements of the issue. You have indicated in your testimony that it is absolutely essential that the kind of management control necessary to run major construction projects be implemented. It seems to me that the lack of good construction management is one of the MTA's major failings. Your testimony also implies that, absent good management controls, we are going to have a repetition of the kinds of horrors you have uncovered already.

Mr. RUSSELL. I think the State comptroller has said, we can be here 5 years from now and have the same conditions, unless things change, and change rapidly.

Senator D'AMATO. What major new initiative would you undertake? What should be done first?

Mr. RUSSELL. Well, I think I would try to put together a construction management team within the agency that has an overall look at all three of the agencies, not only the Transit Authority, and has construction ability that I do not believe is in there right now. I think that we have leading the authorities now people with their basic backgrounds in operation of mass transit. I think they can excel in that area. I am not sure that we have there the kinds of expertise that would be required to look at a construction program of $8.5 billion over 5 years. They are just difficult to find nationwide. It is going to be difficult to get the best people, but I think that effort has to be made.

Senator D'AMATO. I have a number of questions dealing with the 63d Street tunnel that I am going to submit to you in writing. I ask you also if you would make a review as to what you believe the cost estimates might be in the tunnel repair effort. In addition, I am going to ask the staff of the committee to contact you to share with you our legislative proposal. We would welcome any suggestions that we might include before we submit that legislation in the near future.

Mr. RUSSELL. I will be pleased to do that Senator.

Senator D'AMATO. Thank you so very much.

Mr. RUSSELL. Thank you.

SUBMITTED QUESTIONS

[The following questions were not asked at the hearing but were submitted for response for the record:]

QUESTIONS SUBMITTED BY SENATOR D'AMATO

QUESTION #1

What is your opinion of the MTA's ability to carry out its $8.5 billion Capital Program? What are the factors that impede the MTA's ability to handle a major Capital Program?

ANSWER #1

Presently each agency of the MTA is attempting to evaluate its progress and problems in carrying out an $8.5 billion dollar Capital Program. As a result, many changes in the way the TA is managing its Program are being put in place. Many of these are just too "new" to review. But it is my opinion, that not until the MTA starts to view this program as a whole will the real savings be identified. Such savings would be realized through consolidation of purchasing, discounts for quantity buying, etc. Further, fraud and abuse internal controls could be standarized, performance evaluation of consultants and contractors could be done and distributed to all constitutent agencies, and communications between all agencies could be institutionalized.

We remain doubtful that the MTA as it is presently structured will be able to bring about these necessary reforms.

The facts that have impeded the MTA's ability to handle a major Capital Program are:

-Ability to make business decisions

-Lack of record keeping

-Lack of communications between operating and planning departments

-Number and quality of staff, especially engineering

QUESTION #2

When did your office become involved in reviewing the 63rd Street Tunnel Project?

ANSWER #2

We began our investigation in late July of this year.

QUESTION #3

What is the scope of your review of this project and when do you expect to complete your work?

ANSWER #3

Our investigation, in many areas, is still in its preliminary stages. I have assigned a large staff and have subpoenaed records from both the TA and from major contractors who worked on the tunnel. We are looking into possible fraud and abuse and are reconstructing the history of the project from its inception to assess how we wound up in the situation we find ourselves in today.

In addition, I have consulted with Mr. Welch and his staff, the State DOT and a number of law enforcement agencies. We hope to complete this investigation by the beginning of 1986.

QUESTION #4

What has been your experience in obtaining documentation from the MTA in order to review MTA projects? Does the MTA cooperate with your requests?

-Is the Material readily available?

-What steps must you follow in order to assemble the "paper trail" necessary to review a major project?

-How many people on your staff are involved in the current review of the 63rd Street Tunnel?

-Do you have adequate personnel to handle such a large investigation?

-How does the MTA's record keeping ability compare to that of various contractors on the 63rd Street Tunnel project from whom you have sought documents?

ANSWER #4

We have often had trouble locating documents. For example, we found there are rooms full of file cabinets and cartons, most of them unmarked dealing with the tunnel where material has been filed haphazardly, and where there is no index system. This material was filed in 23 different locations.

As a result, my staff must read through literaly thousands of documents, looking for those which might have significance for our investigation. Many documents are simply missing or cannot be found. TA personnel can offer little, if any assistance in bringing order to this chaos.

Obviously, if we can't find the documents, and if the records are in such disarry that we have to spend months locating and gathering them, it results in two things: (1) an inordinately long amount of time needed to do our work, and (2) the need to find an alternative source of information, primarily with outsiders conducting business with the Transit Authority.

As a matter of fact, this problem not only exists in the tunnel investigation, but in almost every other area we've looked at in the TA. Let me give you a recent example.

Earlier this week, I reported on a joint investigation we conducted with the Brooklyn District Attorney into the purchase of fire retardant subway ties. We were trying to determine what tests had been done and exactly how the decisions were made to buy such ties, which began in 1971.

We proved that the fire retardant chemical involved was useless. But, we could not find any records to show why this product was purchased over such a long period of time without having been tested even once.

It is our experience that the records kept by private contractors are generally in better order than those found at the TA. As I have already stated, we are often forced to make up for the disorganized state of the Authority's material by working with documents of private firms.

At present, approximately fifteen staff members, including attorneys, auditors and investigators, are assigned to this investigation. While we would wish to assign additional personnel, to cope with the abysmal state of the records and to bring this investigation to a rapid conclusion, staff constraints makes this impossible.

QUESTION #5

It is my understanding that when your office reviews MTA plans for transit service curtailments (eliminating bus routes, or closing subway stations) your criteria requires that 25,000 people be served in order to maintain service. The latest ridership estimates for the 63rd Street Tunnel indicate that the tunnel will only serve 2,000 people per day.

Do you believe that the MTA will be able to put this tunnel into operation?

ANSWER #5

Senator, my office has no criteria regarding maintenance of public transportation service based solely upon ridership figures. Whenever we review such issues, a number of considerations go into the equation.

In regard specifically to the 63rd Street Tunnel, ridership projections alone would, from a cost benefit point of view, clearly not justify its operation. On the other hand, as I've already pointed out, other considerations such as the presence in the effected area of schools, hospitals, sports facilities etc., as well as the potential impact on the area's continued economic development must be considered by the MTA before making this decision. Obviously too, the cost of mothballing this facility must be considered before an informed decision can be made.

STATEMENT OF ROBERT R. KILEY, CHAIRMAN, METROPOLITAN TRANSIT AUTHORITY

ACCOMPANIED BY:
DAVID GUNN, PRESIDENT, TRANSIT AUTHORITY
MICHAEL ASCHER, CHIEF ENGINEER

Senator D'AMATO. Chairman Kiley and his staff have arrived. I am going to call Chairman Robert Kiley, Transit Authority president, David Gunn, and chief engineer, Michael Ascher.

Mr. KILEY. Nice to see you, Senator.

Senator D'AMATO. Good to see you.

First of all, we will accept all of your prepared testimony for the record as if read in its entirety. Of course, you are free to read all or any part of it, or even go beyond it.

Mr. KILEY. Each of us has a prepared statement. What I would suggest is that the TA president and chief engineer submit those for the record, and with your permission. I would like to read my statement, if I might, just to provide some framework for all of us.

Senator D'AMATO. That will be fine.

Mr. KILEY. We appreciate the opportunity to be here today. I share your interest in attempting to make some basic sense out of what many see as a discouraging example of Government's ability to do anything on time or within budget.

We, too, are unclear about many aspects of the long history of this project, which had its beginnings more than two decades ago. The principal business of the subway system then as now was getting people to and from work. Transportation planners and policymakers at the city, regional, and State levels recognized, certainly in the mid-60's, the need for faster, more efficient transportation from the outer reaches of the Bronx, Queens, and Brooklyn into Manhattan's central business district. It was this recognition that eventually grew into MTA's New Routes Program, which at its most expansive, by the late 1960's, early 1970's, was designed to add 11 new routes and 40 additional route-miles to the subway system. It was estimated then that the program would take some 10 years to complete at a cost of around $1.3 billion.

Over time, however, the hard realities of difficult construction, unprecedented inflation, municipal fiscal constraint, and changing public policy eroded the substance of the New Routes Program. Today we are essentially with three widely disconnected holes in the ground. One we euphemistically refer to as the Second Avenue Subway. The other two are the 63d Street tunnel, extending from West 57th Street in Manhattan, under the East River and Roosevelt Island, to 29th Street in western Queens; and, of course, the Archer Avenue tunnel in eastern Queens. These three new routes, totaling only 5.3 miles of the originally anticipated 40 miles, have taken 16 years and more than $1 billion to bring to their current incomplete state.

The Archer Avenue tunnel and the 63d Street tunnel are at either end of what was to be a massive new route, carrying commuters from the rapidly growing borough of Queens and carrying them under the East River, some 36,500 of them during the peak hour, into Manhattan. Both ends of that new route are nearing completion, but unhappily the vital link between them may never be built, not because there is no need for it, indeed the need today is even far greater than it was in the mid-1960's, but because there is doubt about the money. As a result, if the 63d Street tunnel were to open today, it would carry not 36,500 riders during the peak hour from Queens to Manhattan, but a mere 600.

Clearly, this is a sorry tale and a major embarrassment. What went wrong? Have we learned any lessons over the past 20 years?

Senator D'AMATO. No.

Mr. KILEY. Could this happen again?

Senator D'AMATO. Yes.

Mr. KILEY. Is the MTA's current $8.5 billion capital program in any better shape than the New Routes Program which preceded it?

Senator D'AMATO. Nope.

Mr. KILEY. These are the tough, relevant questions that I know you are interested in and that we need to explore today, and in the very near future.

Eighteen years ago this month, in November 1967, a $2.5 billion State transportation bond issue was approved. Six hundred billion dollars of it was to go into the New Routes Program. John Lindsay was mayor; Nelson Rockefeller was Governor; Lyndon Johnson was President; and Robert Kennedy was the junior Senator from New York. Although Vietnam was beginning to take its toll on America's self-confidence, and although urban turmoil was only months away, the country and the city were still in a can-do mood. Guns and butter, growth and expansion, Government and progress, were virtually unquestioned bywords for most Americans. As a people we were only just beginning to rub up against the limitations that made the 1970's such a drab, dreary, difficult decade.

Although the New Routes Program began with State and city funding, Federal dollars soon became its life blood. It is important to remember that until 1975, Federal transit funds could be used only for new construction and new equipment. As with so many other Federal programs growing out of the Great Society era, including those for highway, housing, water, and sewer projects, the emphasis was on new facilities. Even though urban infrastructure was crumbling across America, Federal funds were not being provided for its maintenance or rehabilitation. Nowhere was this more true than in the transit area.

A case can be made that the New Routes Program never made any sense. Even in the mid-60's vast segments of the existing New York City subway system were not receiving the attention they deserved. One can argue that the existing system should have received every capital dollar that was allocated to build new routes, but that was not the common wisdom in an era when the booming growth of outer suburbs masked deep disinvestment in the inner city. In an era when it was easier to garner support for a new highway or a new high school or a new bridge, or even a new subway tunnel, than it was to generate enthusiasm for rehabilitating existing structures or maintaining existing equipment. In those days we were still possessed of a frontier mentality that led us to neglect the established in favor of the new, and Federal funding priorities reflected that view. That mentality may have won the West, but it nearly lost us our older northern and eastern cities.

In retrospect, the initial strategic decision to go forward with a major capital investment in new routes instead of investing those dollars in the rehabilitation and maintenance of the existing system, may have been a mistake. I honestly believe that the mayor and the Governor and the State legislature and the MTA board would not make that mistake again. As individuals and as institutions, all of us have learned the hard lessons of the 1970's, but in my opinion, in 1967, when the State transportation bond issue was passed, and even 2 years later in 1969 when construction on the 63d Street tunnel actually began, neither elected nor appointed officials nor the public at large reasonably could have been expected to forsee the explosive inflation or the crippling city financial crises that left the purposeful optimism of the New Routes Program in shambles.

The decision to proceed with new routes having been made, how was the program carried out?

Through our own inspections and those of an independent consultant, the Construction Technology Laboratories of Skokie, Ill., who were retained with the advice and concurrence of the Urban Mass Transportation Administration, we determined that the 63d Street tunnel segment of the New Routes Program does meet the essential standard for such a public work. It is structurally safe and sound and will have a useful life of sufficient length to make reasonable the thought of putting it into revenue service. The independent consultant's report on Archer Avenue will not be available until later this month, and I should like to reserve judgment on that new routes segment until then. The Second Avenue segment also will be treated in a separate report.

To focus on the 63d Street tunnel for a moment, let me first acknowledge the many questions that have been raised about possible deficiencies in its design, construction, and maintenance. Mistakes were made, but I believe we have learned from these mistakes and we have put into place adequate safeguards to assure that future projects do not experience the same promise. As a result we can be reasonably assured that the MTA's 5-year capital program will deliver on the service improvements it has promised.

SUMMARY OF LESSONS LEARNED

I shall attempt to summarize the lessons we have learned and what we are doing as a result, and I hasten to add that we did not get into this situation overnight, and the road back will not be achieved overnight. It is going to be a tough, protracted process.

First, we have learned that returning our existing system to a state of good repair, and maintaining it in that condition is and must always be our first priority. New routes are for another generation. Our challenge is to restore safety, mechanical reliability, and civility to the New York City subway system.

Second, we have learned that the old functional organization of the Transit Authority's engineering and construction department simply was not sufficient to support the weight of today's extensive, expensive capital projects. That department has been reorganized on a program-project manager basis. We now have individuals who are responsible for and can be held accountable for the progress of specific projects. Under the old organization, many individuals had responsibility for little pieces of each project. Predictably, when everyone was responsible, no one was really responsible and no one was accountable. We believe we are on the way to curing that problem.

Third, we have learned that regardless of its organizational structure, the TA's engineering and construction department cannot be operated successfully on an ad hoc basis.

As you know, Senator, from personal briefings in your office, we have moved forcefully to implement effective, up-to-date policies, and procedures governing the planning, design, and construction of capital projects. And we are impressing upon our people their absolute obligation to follow these policies and procedures and to document project decisions.

Fourth, we have learned that a successful capital project requires close communication, coordination, and cooperation between the Transit Authority's engineering department on the one hand, and our operating departments on the other. This approach is being impressed upon TA personnel from the top down. In the case of the 63d Street tunnel, as work dragged on over the years, structures and equipment provided under the construction contract began to require maintenance. The record shows that during the city's fiscal crisis the engineering department made numerous requests of its operating counterparts to begin maintenance on the tunnel. Those requests were denied and the resulting deterioration and damage will unquestionably be expensive to repair.

The operating departments did not decline out of mean-spiritedness; they simply did not have the resources. As several memoranda from the Transit Authority's chief operation's officer of that period to the chief engineer make clear, during the city's fiscal crisis the operations side of the house simply did not have sufficient manpower not funds to tend to the structures and equipment that were in daily use, let alone to maintain those in the tunnel that would not see its first subway car for many years. When basic safety inspections and routine maintenance on equipment everyday were being neglected, how could scarce resources be diverted to maintain a partially finished tunnel? In the transit business, as in most others, operating priorities drive capital projects or else those projects will never receive the attention they deserve.

Finally, we have learned that capital projects require regular, in-depth review and oversight at all stages of their development, if they are to be completed successfully. Such a system of review and oversight is in place for all the MTA's 5-year capital program projects.

The TA's new policies and procedures produce the documentation that substantive review and oversight require. Detailed monthly reports on each of the TA's more than 350 capital projects are prepared and assembled in a single book. Individual reports include a basic project description, information, and progress as measured against schedule and budget, and a brief statemen of project highlights for that month. These reports are coded to signify projects with no problems, those with incipient problems, and those with significant problems that will adversely affect the authority's ability to bring the project in on time and within budget. These reports are the basic building blocks in an extensive management information system designed to communicate essential facts about capital projects to senior managers at the TA and the MTA.

A parallel series of monthly and quarterly reports are made on an individual project basis to the MTA board, UMTA's regional administrator, and to the State's MTA Capital Program Review Board.

We do not confuse review and oversight with project management. Directing day-to-day activity on individual capital projects is the Transit Authority's responsibility. But rigorous review and oversight by those inside and outside the MTA guarantees that if things begin to go badly, we as well as the public and its elected and appointed officials, will know early enough to take corrective action.

If such an extensive system of review and oversight had been in place in the past, we would have known sooner and with much more certainty about the problems with the 63d Street tunnel. The chasm between capital and operating imperatives that left expensive equipment smoldering in a dark, dank tunnel for 10 years, might have been bridged in a timely, cost-effective fashion. And the fundamental question of how the New Routes Program meshed with the region's evolving fiscal reality might have been raised earlier than 1979, 10 years after construction commenced, when Mayor Koch and then MTA Chairman Harold Fisher, made the unavoidable decision to curtail the 63d Street tunnel project at 29th Street in Queens.

Where does all this leave us? The 63d Street tunnel project is 96-percent finished. Construction must be completed and some remedial work done to repair deficiencies in past construction and to compensate for deferred maintenance. By the end of the year we should know how long that will take and how much it will cost. Then we will face the decision as to whether we should actually put the tunnel into service, at an estimated annual cost of $10 to $15 million to carry a few hundred people to Manhattan at rush hour. And if we decide not to operate service through the tunnel, how much would it cost to mothball the facility? Would the Federal Government then require us to repay the Federal share spent on construction? Will there be another new routes push to build the so-called local connection to subway lines in Queens, even though the existing system is still starved for capital funds to bring it back to a state of good repair. Clearly, we have not heard the last of the 63d Street tunnel.

For my part, I am satisfied that we are taking every reasonable step to insure that the MTA never finds itself in such a predicament again. I know that that does not bring back a billion dollars, nor does it do much to restore confidence in a troubled agency, but it does help insure that 20 years from now no one will be wondering how we lost our way with the MTA's capital program in the 1980's.

Thank you, Senator.

Senator D'AMATO. Thank you for your thoughtful presentation, raising some of the very real and legitimate issues and problems that confront you. I must confess to you, that I was more than a little perturbed after having toured the 63d Street tunnel in April 1985, and having received no reply from the TA to my criticisms, until several months later when you and President Gunn went down into the tunnel. The tunnel contained a large accumulation of water, which I have now heard originated from a pipe that had burst. My first question is, When did the problems in the tunnel first come to your attention, given that this was the largest construction project that the MTA had under its management?

Mr. KILEY. Senator, let me speak for myself, and then we can ask Dave Gunn to respond to the same question.

I guess I have been aware for a long time that the 63d Street tunnel and the other new routes projects were troubled. Word of their progress or lack of same was not confined in New York, it was fairly well known in the transit industry. When I arrived on the scene in New York, in December of 1983, a particular problem in connection with the 63d Street tunnel was drawn to my attention shortly after arrival, and that was the question of a design problem in connection with an I-beam in the tunnel. At that point it was a matter of scrutiny on the part of at least two Federal agencies. I was contacted to have my cooperation solicited in providing documents and information that might be germane to the investigation then being undertaken by Federal authorities. Since I already knew that the 63d Street tunnel and other new routes projects were a troubled part of the Transit Authority's past, I also asked that a review be done of the I-beam issue and of the history and documentation pertaining to the 63d Street tunnel.

But I hasten to add that the circumstances of my arrival on the scene were overwhelmingly oriented toward tremendous problems in the operating of the subway system itself. I recall still very vividly that the first weekend that I was in town, even before my name had been put forward to the New York Senate, getting a phone call in my hotel saying that an entire fleet of buses had to be withdrawn for 5 days because there were problems of an unknown nature that needed to be discovered. We had experienced some 17 main line derailments. We knew that there were over 500 places on the track system that were regarded as so unsafe that there had to be slow orders of 5 to 10 miles an hour issued. There were fires on subway cars that needed to be tended to. There was a crises atmosphere at the time. Indeed the State legislature noted the crises surrounding the subway system at the time that it made the capital plan possible.

My first concern, and subsequently that of Dave Gunn, had to be dealing with the literal crises that were facing us then. And the second priority for us had to be to get control, as best we could, of the operating departments, which were operating the service that was then running and trying to deliver some 3 million people safely and reliably to their destinations. There are only so many things you can do at once, particularly when you arrive on the scene. We were aware of the 63d Street tunnel problem, being assured by people in the engineering department that there were definitive dates for being open the tunnel for service, and that problems that existed could be cured. Clearly, it would have been better had we been attuned to those problems earlier.

Senator D'AMATO. It would have been better if you had gone down there the day I went there.

Mr. KILEY. Well, as I look back on it, Senator, I cannot honestly tell you, in terms of other problems that we faced, that I would have done it any differently, because the problems that were confronting us in the actual operation of this system were overwhelming and needed to be dealt with as an absolutely urgent matter. I believe that when we finally got into the matter of the tunnel, that we moved reasonably and responsibly, but I hasten to add that when you are looking at the pecking order of issues, and you see that in the case of the 63d Street tunnel, on which I was briefed at length by the engineering department in early 1984 that it is 95-percent complete, and you are being told, "Yeah, there are a few problems, but they can be dealt with," your attention tends to be molded around those issues which you know damn well are crying out for attention.

Dave do you want to respond to that question?

Mr. GUNN. I arrived on the scene in February 1984, and I was involved, my first involvement with the 63d Street tunnel was the gathering of the information as a result of the beam. In other words, I was specifically involved in that. However, my approach to the capital program was to join in a series of briefings that the chairman had already scheduled prior to my arrival, and then further briefings that I had arranged with my staff. And it became very clear to me early in my tenure at the Transit Authority, that the management of the capital program and the thrust of the capital program in a number of areas, left a lot to be desired. And the problems, as I saw them, based on an overview of the capital program, going through a series of briefings, were similar to the ones that the chairman alluded to in his testimony. In other words, you had an organization where responsibility was not clearly fixed. You had an organization that did not coordinate well with the operating department. There was no systematic set of procedures to be followed within the department. There was no systematic reporting of results against budgets or against targets or projecting of future anticipated results. And it became fairly clear that there was some fairly serious skill-level problems within the engineering department.

Now, we moved very quickly to begin the process of putting in place an engineering department that could manage the capital program. And we started the move toward a project management type of organization in the summer of 1984. My priorities in terms of the capital program were to deal with those items which were still either in the process of going out for bid and for design, or projects which were just being undertaken. In other words, projects which still had a serious amount of money that was controllable, in terms of where the money would be spent. And I spent my time on those project which were controllable. In other words, where decisions were still being made which could affect the future course of that capital program. The barns and shops program, for example, we put a hold on any further work on that until the scopes were refined and until certain items that we were procuring were removed from the specifications; for example, blow-down facilities in the varies carbines which we knew at that point in time did not work, yet they were still in the capital program.

The 63d Street tunnel itself was portrayed by the engineering department as being probably ready for service in the summer of this year. In other words, I believe, the first dates that we were given was it would be, the 63d Street portion, would be available for service in 1985. So the 63d Street tunnel was a project initially which we were concerned about, I was concerned about based on my overview of the managerial problems in the engineering department, but it was a project which was

90 to 95 percent complete and it was a project that the engineering department felt would be ready for service in this year, the year that we are in, the summer of this year. So initially I did not pay a lot of attention to the 63d Street tunnel, for the reasons that the chairman stated, that my concern was on the operation, dealing with the problems I had in track, cars, and with the basic problem of managerial control in the engineering department.

I became aware of problems in the 63d Street tunnel in the winter of 1984–85 when the operating department started reporting back that things were not going well in the tunnel. And that led to a series of reviews by operating personnel, and it culminated in the current situation.

Senator D'AMATO. I find perfectly acceptable Chairman Kiley's explanation that his first priority was to deal with immediate problems and the day-to-day safety of TA operations. It is easy to recall the recent fires on the subway tracks, the breakdown of buses, and similar kinds of problems. However, I do not find the explanation acceptable as it relates to the MTA's failure to publicly respond to both UMTA and to my office after our visit of April 21, 1985. It was almost an attitude that we are going to do what we want to do in our own time. I have to state that to you on the record, because that was the case.

About 6 weeks later—and it was almost a staged performance in my opinion—was the first time there was any public acknowledgement of the kind of problem that exists. We are now talking about June or July 1985. I do understand, obviously, prioritising your initial encounter with a very troubled transit system; but, as it relates to your response after the spring of 1985, that does not hold water. The tunnel held water, but the explanation does not hold water.

Let me move on to something else.

I want to conclude this area of our inquiry and move on to other issues with respect to the suggestions put forth by the comptroller of the State of New York, and by the inspector general, and in connection with the legislation which I will introduce. I did not touch on a third area, and that is: the delay in present programs where funding has been obtained. In some areas, I think that delay is simply intolerable.

In regard to the G–4 beam, Anne Miano of my staff, in a conference call with CTL, the consultants hired to determine the safety of the beam and with representatives of the Transit Authority, was informed of several facts. I want you to have this information for the record:

One, CTL did not consider a verification of the installation of reinforcing material in the concrete beam above the G–4 beam as a part of the scope of their work. Two, CTL was not aware of any physical connection between the concrete beam and the G–4 girder. Three, CTL stated they had not been furnished information relating to the kind of welds used on the beam, nor did they have calculations for the kinds and extent of welds which should have been used to physically attach the additional steel to the sides of the web. CTL said that the information was about to be furnished to them by the Transit Authority. They also said they have not examined the as-built drawings for the beam.

The facts indicate that they did not know what kind of welds were used. They did not have the as-built drawings. How did they then reach the conclusion that, "The modified girder G–4, in our opinion, has strength to support existing dead loads and design live loads"?

Mr. KILEY. Let me just say, I will turn this over to Mike Ascher, who is the chief engineer, but let me say, first of all——

Senator D'AMATO. I think that we had better get a complete report using correct engineering methods. As far as I am concerned, these deficiencies cast doubt upon the entire CTL report. Also, you might have Chief Engineer Ascher ask some further questions. What about the funds that will be required to put the tunnel into operation? Why wasn't that matter included in the study? Simply to say, "The tunnel is structurally sound," and "Yes, there are repairs that have to be made and costs incurred," seems like a superficial job. I do not know if CTL has that information. Evidently, they are in the process of getting the information, but I certainly believe it should be part of any comprehensive report, given the severity of the problems.

Mr. KILEY. Before I give it to Mike Ascher, let me just say that the final report is a draft report. We have tried at every step along the way—this is the third report—to try to pass these reports along to all interested parties, certainly your office, Senator, UMTA, and so on, very, very quickly. I think all of us are still in the process of reviewing them.

Senator D'AMATO. You have got to try not to pass them to the press so quickly too.

Mr. KILEY. Well, this has been an extraordinarily open process.

Senator D'AMATO. I understand, but let me tell you something, it seems to me that when UMTA received the CTL report in Washington, it should not have appeared in any of the press the very next day. That is absolutely in contravention of the law. I do not believe that kind of thing serves anyone's interest. But let us proceed on the matter of the G–4 girder.

Mr. KILEY. Let me say that of course people will have questions about the findings. That is why the independent consultant was hired and went in to do his work. It was to reach conclusions and recommendations which we all know are going to be scrutinized very carefully. So, I don't think it is anyone's interest here to suggest that should not further scrutiny or more questions.

I might add that I am as anxious as anyone to ask probing questions and to get solid answers. It is not only important for the structural integrity of the 63d Street tunnel, but, as you suggest, it goes to the broader question of how we are managing our overall program. So the door is certainly not shut, as far as we are concerned, on the 63d Street tunnel by a long way.

Mike, you might want to deal with some of the technical questions that the Senator has raised.

Mr. ASCHER. Senator, with regard to CTL's scope of work, it is a very important point to note that that very scope was reviewed with UMTA prior to the work actually being carried out. That is not to say that as this report is reviewed we are adverse to amending that scope of work to make a more penetrating review into any area.

Senator D'Amato. Now, Mr. Ascher, let us look at something. Do you mean to tell me that you accept as conclusive something in a report where your outside engineer has said that he was not furnished information relating to the kinds of welds used on the beam? Yet, despite this omission, CTL concluded that the modified girder has strength to support the existing dead loads. Now, come on. You cannot say on one hand that you conclude that the beam is safe and then say, "Well, we will add this to the scope of the work." This is not the scope of the work; it is the quality of the work. If they are going to reach a conclusion based upon inadequate information, I would suggest to you that you had better have them go back and not only look at this beam, but look at the other engineering findings that they have made in other areas. It has nothing to do with the scope; this has to do with quality.

Let me ask you something. Did you read the FBI report on the cut beam?

Mr. Ascher. I have seen portions of it, yes.

Senator D'Amato. Did you give a copy of this report to anyone else?

Mr. Ascher. I'm not aware of any further distribution on that, Senator.

Senator D'Amato. Mr. Kiley, did you receive a copy of this report?

Mr. Kiley. I have not seen the report. I have had the gist of it related to me. Part of the basis for that report rested in information that was provided to the FBI in late 1983 and early 1984.

Senator D'Amato. Did CTL see the relevant portions, page 3, paragraphs 2 and 3. I will read them to you:

> The calculations to determine the lowered allowable loading of the modified G-4 are based on the assumptions that the cross section is uniform over the entire length. Inasmuch as the cross section is not uniform, and particularly inasmuch as the bottom flanges is not contiguous over the base length, whether or not the calculation value is a realistic one, is questioned.

And he goes on. Paragraph 3, I will read you part of it:

> Such welds are not permitted in structures if there will be significant tension stress acting across the welds and are not permitted at all in structures such as bridges. There is no indication that MIT evaluators considered the nature of the stress system at the welds.

Now, did you see this?

Mr. Ascher. I do not recall reading that particular paragraph, sir.

Senator D'Amato. Well, it is rather relevant with respect to the beam. You mean you did not look at this?

Mr. Ascher. Senator, we are trying to derive an independent assessment. I know you very much appreciate, and this is the reason we have engaged Construction Technologies Laboratories. And I think it would be certainly within our mutual interests to have that particular information made available to our consultant and get a report back to satisfactorily answer your concern.

Senator D'Amato. Well, on page 15, with respect to girder G-4, the top of the page, have you seen what the conclusion was on that report?

Mr. ASCHER. Yes.

Senator D'AMATO. You have seen the CTL report, haven't you?

Mr. ASCHER. Yes.

Senator D'AMATO. Do you know what it says about the G–4 girder?

Mr. ASCHER. It points out that it will satisfactorily handle its load with a margin of 69 percent.

Senator D'AMATO. Are you an engineer?

Mr. ASCHER. Yes.

Senator D'AMATO. If, indeed, they were not aware of the connections between the concrete beam and the girder floor, and they did not consider verification of reinforcing in the concrete beam, and they were not aware of the information with regard to the kind of welds, could you come to that same conclusion without that information?

Mr. ASCHER. No, sir.

Senator D'AMATO. Could you obtain that information? Do you think that this committee expresses a legitimate concern in suggesting that before you can make a determination with respect to the safety of that beam, that CTL should get that information?

Mr. ASCHER. Yes.

Senator D'AMATO. Will you request that of CTL?

Mr. ASCHER. It will be done.

Senator D'AMATO. Thank you.

Let us move on to another area because again, notwithstanding the fact that I am concerned, I know we will eventually get to the bottom of this. I think that there are some broader questions.

I am going to continue to work as hard as I can to support mass transit. It is not going to be easy to ensure the flow of the necessary dollars to help rebuild our transit systems in light of budget constraints that we see in the future.

I think on page 3 of your statement Mr. Kiley, you framed the issues of great importance. You said, "Was the MTA's current $8.5 billion capital program in any better shape?" Regarding the shape of projects that you now have, and those you have had in the past, Comptroller Regan has expressed very severe reservations, and the inspector general has contended that he also has reservations. Given the backlog of projects that you have at the present time, where funding and contracts have been awarded, how long do you think it will be before the MTA has the kind of capability you would feel comfortable with in managing current and future projects? How long will be be before you will have the necessary engineering and management capability?

Mr. KILEY. Let me point out, first of all, Senator, that I am delighted that the comptroller and the inspector general have been looking at the capital program.

Senator D'AMATO. The comptroller has indicated that you are working with him and progress is being made.

Mr. KILEY. I asked him to get involved in the capital program. It had not been the tradition of his office to look into the MTA's capital program, and when he asked me the question, "What can I do that would be most helpful to you?" in early 1984, I said that I had been somewhat astonished by the lack of oversight and review of the implementation of the capital program and I would appreciate his assistance. And I think I owe him a great debt of thanks that he was able to devote resources to the capital program.

The same is true of the inspector general. He and I had some differences on whether that ought to be their top priority, but I think when the new inspector general came into office, he did regard it as his top priority, and he is acting accordingly.

As President Gunn has indicated, the TA began moving in the spring and summer of 1984 toward a complete reorganization of the TA's approach to the capital program. There are basically three elements involved in this. One is to insure that each of the 350 projects in the 5-year capital program has a project manager who is responsible from inception through completion. He has a budget and he is responsible for any changes in the budget. He is responsible for the scope and any changes in scope. And he is responsible for schedules and any changes in schedules.

Second, there were almost an absence of procedures and management information systems by which you could keep track of such a complicated, complex series of projects. Due mainly to Mike Ascher's leadership, since he joined the authority in 1984, procedures are in place, management information systems are working. They are going to need refinement and modification as we go along, but I referred in my testimony to the fact that we now have a set of monthly reports that are tabulated on every single project in the program. If you have got a project that is going all right, it is on green paper. If you have got one where you are suspecting problems, it is on amber paper. And if you got one that is a headache, it is on red paper. And as we have gone through 1984 and 1985, I will be candid to say to you that we have a lot more projects in amber and red than we do in green. But the point here is that we know for the first time what the status of the projects really is.

We have spent virtually all of 1984 and a good part of 1985 reviewing the scope and the cost and the priorities of those projects which, as Dave Gunn mentioned, are still under control. That is there are still dollars to be spent. We are coming out of that review. There are still projects under review, particularly on the surface, the bus operations area, with a much firmer set of commitments, and I believe a strategy. Mike Ascher has reviewed his staff. There are more people to be hired. More people to be identified, to be put in key positions, but he has made a very significant start.

You asked the question, how much time do I think will be required before I am comfortable with the organization and with the work that is being done? I believe that we will be there during 1986. I am a lot more comfortable now than I was when Dave Gunn and I talked about these problems early in 1984.

For all the difficulties that we have in the operation of the subway system, we were deeply concerned that if the same aberrations were to overtake the capital program; if the same seeming disorganization and mismanagement were to be characteristic of that program, that unlike the operation of the subway system, where perhaps with glue and paste and rubberbands you can get by for a while, the public confidence in the ability of the MTA, in the case of the Transit Authority, to go forward would be so undermined that whatever money might have been forthcoming at the conclusion of this program simply would not be there, and that what we would then be facing was a reversion of the period in the 1960's and 1970's where there was no capital investment in the system, and it would then be in great jeopardy of having to be closed down.

So, I am not comfortable yet. And I believe Dave Gunn would agree that we cannot be totally comfortable, but we believe that we are on the way, and that during 1986 there is going to be a lot more activity. We are still hopeful that we will commit a record amount of money to actual contract, not just hopes but contract during 1985, with the help of——

Senator D'AMATO. Contracts under specific performance management controls.

Mr. KILEY. That is right.

Senator D'AMATO. Because we have seen, as you pointed out, there are a number of contracts where dollars have been allocated and projects have been undertaken, but the process has been a nightmare.

Mr. KILEY. Well, I believe that the proposals that you have discussed and are talking about in terms of legislation, and the reasonable request that UMTA has made of the MTA agencies, particularly the Transit Authority, to provide construction management plans in considerable detail, are both overdue and very reasonable. I believe this is an appropriate role for UMTA to be playing, and I am all for it. And anything that can be done in the Congress to assure that UMTA has adequate resources to assure that that is done, not just here but elsewhere, I think should be welcome in the transit industry.

We are anxious that this massive construction undertaking succeed, because unless it does succeed, whatever successes we might achieve in bringing the operation of the system under control will be for not without adequate investment capital.

Senator D'AMATO. Let me ask you two quick questions. As of September 1985, 1,983 designs were delayed. Now this covers just a 1-year period. What is the reason for those delays? And given these delays, how do you decide—and maybe Mr. Ascher should answer—whether to use in-house design staff or contract out for design work?

Mr. ASCHER. Senator, in order to answer that question, I would like to turn the clock back to really early 1985 as it relates to the schedules that were promulgated for measurement of our performance this calendar year. These schedules actually had their genesis in the latter part of 1984. This came at a time in which the projects that were invisioned for

1985 and including 6 months into 1986 were submitted to the MTA board for approval. These schedules, I might add, when I came on the property and reviewed them, I concluded they were not reviewed so that, frankly, they made sense. We never looked at the centergistic affect that each of these projects would have upon available resources. Consequently, what we had was a schedule that really did not take into account the availability of resources to carry them out. In fact, from January 1 we already had built into our schedule for this year delays.

We embarked upon a plan early in the year to review all of these schedules and put forth a new set of program milestones, against which our project managers could be held accountable. They were ambitious, but considered to be also realistic. Now, as part of that process, we felt that it was our obligation to mitigate some of the delays that would have been introduced through this validation process of the schedules. In doing so we recognize that historically it takes in the order of 7 months to bring a consultant on board at the Transit Authority. I submit to you, Senator, that I feel, coming from the private sector, that that is sort of thinking in light-years. It is just unacceptable.

Senator D'AMATO. That is what the procedure calls for at the present time?

Mr. ASCHER. The procedure does not, in itself, identify that it shall take 7 months.

Senator D'AMATO. But if you were to follow the steps necessary from recommendation to finally bringing someone on board, does it take about that period of time?

Mr. ASCHER. That is correct.

I personally met with the vice president of material who has the contracting side, and we attempted to come up with a more realistic program, one that would shorten that procurement cycle down to something in the order of 3½ to 4 months. What has happened is, in order to carry out that program, it was necessary for the contract side of the house to build up its resources. And, Senator, candidly, we did not achieve that. And consequently, what you see in the order of 80 late-design starts are, in fact, a product of not having the resources to carry out a basic plan that we had introduced earlier this year.

Now where are we in this process? The resources are now on board to deal with the contracting issue of consultants. Second, there have been changes in the management side of the contracts area. Greater attention to reporting on the status of consultant selection. And, frankly, a relationship among the bureaucrats within our organization where we can make business decisions when well-meaning civil servants come to an impasse, as it relates to how to advance a contract forward when there appear to be questions surrounding them. So, I feel with these actions we will see now this number of, or this backlog of design starts turned around.

Senator D'AMATO. I would like to make a statement and pose a question. Let me go back to CTL. I will not go over the area of the beam. I expect that you concur with me that CTL cannot reach the conclusion that they stated given their lack of information. I am confident that you will see to it that CTL is provided all necessary information so that we may receive a complete report in light of the most accepted engineering standards.

I take it you agree with me on that?

Mr. ASCHER. Yes. Obviously, Senator, the consultant made assumptions concerning the weld and based on those assumptions drew conclusions. That does not mean that those assumptions were wrong, but what you are asking, it is certainly appropriate that we validate the assumptions that were used.

Senator D'AMATO. CTL also told my staff that complete waterproofing of the tunnel is necessary in order to take care of the problems of chemicals in the water causing deterioration of concrete around the beam. My question is, Will the MTA be prepared to undertake such a major project? Is it possible to completely waterproof the tunnel, and at what cost? And I think as part and parcel of this report these are questions—and this may be beyond the scope that was initially given to CTL—that must be answered. It would seem to me that an appropriate review of this project would cover these issues.

To say that we have found no major structural deficiency that would present the danger of an imminent collapse, is one question. But really, the bigger question is, What will it cost? What will be necessary to fix and operate the tunnel? What dollar investment? Is it the kind of thing that the MTA can or should commit itself to do.

So, I would ask you to see that this report includes that information. I think it is absolutely necessary.

Mr. Kiley, I would hope you would agree with me on this.

Mr. KILEY. Yes. As I said to you, Senator, this is a draft report. We are all looking at it. Your staff has looked at it. I know how much investment has already been devoted to this, and I will guarantee to you that this process will go forward and that these issues will be dealt with.

Senator D'AMATO. OK. I have a number of written questions that really deal with some details in terms of management control, prior projects, et cetera. I think we have made an excellent beginning. I, again, would like to ask you if you would give us your input with respect to the legislative efforts that Congressman Green and I have undertaken. Now, it is our intent to submit that legislation very soon. But by no means is our schedule unalterable if there are substantial improvements or recommendations that should be included. So we would like your comments. We will get it over to you Monday for you comments, as well as those of Comptroller Regan and the inspector general. We do not want to be unduly restrictive, but I have to suggest to you that what we find in too many projects, such as Miami, Detroit, and New York's great tunnel to nowhere, is a lack of control. I think that the Federal Government should have seen to it that there be built-in specific oversight functions. We have appropriated money in this last budget to do exactly that, to give UMTA the resources to have some better project oversight.

We would appreciate if you were to review that legislative initiative.

SUBMITTED QUESTIONS

Mr. KILEY. Senator, we would be glad to respond to additional questions in writing. And I would be looking forward to reviewing the legislation with you.

Senator D'AMATO. Thank you very much. Thank you for your candor today. I appreciate it.

[The following questions were not asked at the hearing but were submitted for response for the record:]

ANSWERS BY ROBERT R. KILEY TO QUESTIONS POSED BY SENATOR ALFONSE D'AMATO ON NOVEMBER 7, 1985

1) HISTORY

As I stated in my testimony before you on November 2, 1985, in my reconstruction of the history of why we have the 63rd Street Tunnel in its present condition I have been able to identify a few key factors. These include the unprecedented inflation of the 1970's, the City's fiscal crisis of the same period, changes in the public policy which had spawned the New Routes program, and the practical difficulties of complicated construction efforts. You may recall that in his testimony before you, David Gunn, President of the TA, identified as an additional explanation for why we find ourselves where we are today the inability of the TA's engineering and construction organization during much of the period in question to manage large projects and accurately estimate capital costs in an effective way.

As you know, and as discussed more fully below, the TA has made organizational and procedural changes to improve its ability to manage large capital projects and to estimate capital costs accurately.

2) OPERATING COSTS

The New Routes still under construction actually consist presently of three routes. These are the 63rd Street Line, the Jamaica El Extension and the Southeast Queens Lines. The latter two combined are often referred to as the Archer Avenue Line.

Operating costs for these routes are expected to add $13.8 million a year (in 1983 dollars) to the Transit Authority's annual operating budget. This includes the cost of train crews and other personnel for operations as well as the maintenance costs for the tunnel systems. Much of the latter expense - pumps, fans, etc. - will be incurred whether or not trains are in service.

Whether, in light of the projected operating costs, the T.A.'s current operating deficit, and the limited ridership we now foresee being served by the 63rd Street tunnel, the tunnel should be opened is the most difficult question we will have to face. First, of course, we must await the final outcome of CTL's investigation of the structural integrity and durability of the tunnel, in particular with respect to the G-4 girder, and also the results of the various studies underway to determine the cost of completing and repairing the tunnel and the equipment in it. Following that looms the question of whether UMTA will insist on being reimbursed the federal contribution to the tunnel's construction if a policy decision were to be made that the projected ridership does not justify the expense of opening and operating the tunnel.

MTA's best estimates indicate that 600 to 1,000 passengers would use the 63rd Street tunnel during the peak morning rush hour, increasing to about 5,800 passengers over a 24-hour period. The so-called Local Connection (an extension of the 63rd Street tunnel connecting with the local tracks of the Queens Boulevard line) would increase ridership in the morning peak hour to approximately 17,000 with total ridership for a 24-hour period rising to approximately 97,000. These projections support my belief that UMTA's willingness to fund the completion of the Local Connection, and thereby increase ridership in the tunnel, will be the critical factor in deciding whether to open and operate the tunnel.

3) WHEN DID TOP MANAGEMENT KNOW OF THE PROBLEMS?

I became MTA Chairman in December 1983 and immediately set out to recruit the best individual I could find to run the New York City Transit Authority. As Chairman, I viewed the appointment of a TA President as the single most important act I would take to turn the subway and bus system around. Even while conducting this search, I received requests from the FBI and the Department of Justice's Organized Crime Strike Task Force to assist their investigations into possible criminal activity involved in the construction of the tunnel. I provided these agencies complete cooperation.

David Gunn accepted my offer and became TA President in February 1984. During these early months, he and I received briefings on the TA's Capital Program. With regard to the 63rd Street tunnel, we were informed that the project was about 90% complete and construction was to be completed in mid- 1985. We were not informed of any serious problems, whether with respect to water damage or maintenance, and no doubts were expressed regarding the tunnel's structural integrity. At about that time, I also commissioned an investigation into the soundness of the G-4 girder by Professor J. J. Connor of the Massachussets Institute of Technology. By the Spring of 1984, he had concluded that the girder, as modified, met structural requirements.

With these assurances regarding a project whose operational existence was long in the future, we turned our attention immediately to the major crises in the day-to-day operations of the TA. In early 1984, TA's track situation had reached dangerous proportions. There had been 20 derailments in 1983, service delays were rampant, and the TA was quickly approaching the point where it would have to consider closing down portions of the system for safety reasons. Compounding the problems with track were serious developments in the area of track and car fires. Literally hundreds of fires were occurring throughout the system causing major disruptions in service; several of the fires were so serious that we were fortunate that lives were not lost.

Given that the safety of our riders and the system was being called dramatically and gravely into question, and given the assurances we had received respecting the 63rd Street tunnel, we viewed the track and car equipment areas as our number one short term operating priority.

It was in early 1985, when the operating departments were preparing to take over the operation of the tunnel and the Archer Avenue line in subsequent months, that they began reporting problems and raising questions about the quality of the completed work. The questions related to such items as cracks in concrete, water leakage and moisture damage to installed equipment. We then visited the tunnel and saw first hand the problems and conditions and the status of construction.

4) MAINTENANCE

By contract, the contractor is responsible for maintaining equipment ready for operation until it is turned over to the TA. We do not have a separate contractor for maintenance of the tunnel or the equipment nor is maintenance included in the wrap-up contracts. Maintenance of the equipment turned over to the TA, such as signals, pumps, power and lighting, is presently being done by in-house forces.

We believe that OMB Bulletin Circular No. A-87 clearly provides for the allowability of costs for maintenance of installed elements of a capital project to keep them in an efficient operating condition during construction. Surprisingly, UMTA's letter of July 27, 1983 disallowed the use of grant funds for activities related to maintaining systems in the 63rd Street tunnel and Archer Avenue line.

As for the repair and replacement of damaged equipment, the TA is presently finalizing a study to determine what remedial actions are necessary, and their cost. At the request of UMTA, the TA is also in the process of obtaining the services of a consultant to independently evaluate the electrical, mechanical and track equipment in a manner similar to the work done by CTL with respect to structures.

There are a total of 38 fans of varying capacities on the 63rd Street Line. Twelve are ready for operation presently. Twenty are still under construction and the remainder are out-of-service for various mechanical or electrical problems that must be corrected by the responsible contractors. Eight fans, not necessarily the same ones as are now operational, were ready for operation in 1983. It appears the fans were not operated by the TA as they became available because of reluctance by the operating departments to take over and operate the fans without the systems of which they are a part also being completed. In August 1985, the new engineering management team mandated that the completed fans be placed in operation for the purpose of reducing the humidity. This strategy succeeded in reducing humidity in the affected segments.

5) DELAYS IN CAPITAL PROJECTS

5 Year Capital Program

In order to put into perspective the question of progress on the 5 year Capital Program, let me first point out that in my view the TA was not equipped at the outset to manage a program of this size, especially in addition to the substantial work already underway. Many changes have been made by the TA's Engineering and Construction Department in the way projects are now planned and managed. I am confident that these changes will produce measurable improvements in program performance during 1986.

The present overall status of the TA's $6.4 Billion-5 Year Program shows that 90% of the dollar value of contracts administered by the TA Engineering and Construction Department has been started in design and about 40% has been placed under construction.

With respect to the TA radio project, the 1983 estimated completion date was based upon preliminary planning assumptions, including that a contract would be awarded in February, 1981. The contract was not awarded until one year later, with a corresponding impact on the construction completion date.

As stated by President Gunn, mid-1986 continues to be the projected date for construction completion. After the construction is complete and the equipment placed in service, there will still remain some administrative details such as formal contract closeout and final payment. This formal contract closeout date of mid-1987 is the one cited in the TA's status report.

There are reasons for the delays in the radio contract. But first, I emphatically state, as you do, that the TA employees, police and public deserve better.

There were, for instance, design and quality control deficiencies by the manufacturer resulting in broken or pitted parts and faulty circuits. We believe that these and other problems are now behind us. Steps have been taken by the TA to minimize the possibility of a recurrence on future projects. As of today, the operating departments and the project manager have established schedules and coordinated the installation of the radios and related equipment.

A project procedure has been implemented at the TA which requires input from the ultimate user and other departments involved at each step of the project progression from inception to final acceptance to assure that the project proceeds in a manner compatible with overall TA requirements. In the future, the TA will include more restrictive requirements in contractor and manufacturer selection and experience as applicable to each case.

As for the availability of contracting companies, we do not believe that the duration of construction by itself will make it less likely that contractors will bid on MTA projects. With regard to the 63rd Street tunnel, there were no contracts which extended for the duration of the construction period. Construction contracts were awarded by section. The 63rd Street line was divided into eight sections and the Archer Avenue Line into ten sections. Each of the sections was bid as a separate contract as the work developed in a logical sequence. However, in some cases, the same contractor was successful in obtaining more than one contract. The contracts were also further subdivided into types of work, such as general construction, track, fire lines, lighting, power, signals and station finish. Many of these specific contracts have been completed.

6) QUARTERLY REPORTS TO UMTA

In addition to the regular quarterly reports to UMTA, the TA now submits to UMTA copies of its monthly Project Status Reports for each project on a standardized format developed for internal TA use. The project manager prepares the monthly report and it is reviewed and approved by the assigned Assistant Vice President. It contains schedule and cost data and monthly project highlights including concerns and other significant comments. The report sheets are color coded, red, yellow or green, to highlight project concerns and potential problems. The monthly reports are collated and submitted to senior management at both the TA and MTA. The status of the projects are periodically reviewed with UMTA using the above reports as well as the standard UMTA quarterly reporting documents.

7) ABANDONING THE TUNNEL PROJECT

Since my appointment as MTA Chairman and David Gunn's appointment as TA President, there has been no consideration of abandonment of the 63rd St tunnel project, if by that you mean "walking away" from the project without providing for either its completion or orderly suspension. MTA and TA management are aware of their obligations under grant contracts and expect support from the federal government in arriving at an appropriate resolution of the current situation. As evidence of its good faith, MTA is advancing funds to carry out the completion of the project pending the renewal, upon the conclusion of CTL's work, of UMTA's letter of credit on these grants.

8) COST ESTIMATES

In the past the Transit Authority experienced numerous problems with the preparation of capital cost estimates. There were no procedures governing the preparation of estimates. Each engineer who prepared an estimate applied inflation factors, labor rates and material prices he understood. Estimates were not always prepared by the same persons and often they were poorly documented. Bids received were not always compared against the estimates and analyzed for variances, so as to improve estimating techniques.

To remedy this, the TA's Engineering and Construction Department is in the process of developing a Capital Cost Estimating Division. This group, dedicated to developing cost estimates for capital projects, will be responsible for the following:

- Preparation of all capital cost estimates for new projects, additional work orders, and changes to contracts.
- Implementation of cost estimating procedures, which have already been prepared in draft form.
- Establishment of a computerized cost estimating data base to be used in the preparation of all estimates.
- Comparison of each bid received with the detailed estimate. Where variances are noted, required changes will be incorporated into the data base for use in future estimate preparation.
- Implementation of standardized documentation forms to be used in the preparation of estimates.

- Comparison of completed job costs to estimates and bid prices to generate improvements to estimating capability.

It is expected that the Capital Cost Estimating Division will be fully operational by Spring 1986.

9) MTA IMPLEMENTATION OF NYS COMPTROLLER'S RECOMMENDATIONS

It is true that many of the noted deficiencies in the TA's initial handling of its capital program stemmed from its not having been prepared, in terms of management, information systems and engineering capacity, to assume so enormous a task when capital funds suddenly became available. David Gunn and I recognized that lack of preparedness when we assumed our respective posts and we began immediately to take corrective action. Among the initiatives we undertook, some of which are still in the process of development and implementation, was a dramatic increase in the number of accountable managers throughout the TA, a restructuring and staffing up of the TA Engineering and Construction Department, and a plan, already described above, to upgrade significantly the TA's capacity for accurately and systematically estimating the cost of its capital projects. You may also recall that President Gunn placed a number of the TA's capital projects on hold in 1984 in order to reassess specific projects and the overall direction of the program.

As to the audit reports issued in February and May of 1985 by State Comptroller Edward V. Regan, they were the product of a review of the TA's capital program which David Gunn and I requested the Comptroller's office to do. Mr. Regan acknowledged that fact in his testimony before you on November 2, 1985. Comptroller Regan also stated at that hearing that he was satisfied with the TA's implementation of many of his recommendations, not only those made with respect to the MTA's Capital Program but also others he has made regarding management improvement.

As to the specific questions you have posed regarding implementing the Comptroller's recommentations, the answers follow:

ESTIMATING AND CONTROLLING COSTS

In order to control costs, capital cost estimates will be prepared and updated at various stages of each project. At the outset of a project, a preliminary estimate is made based on the limited design information available. As the work progresses and more detailed drawings and data are developed, the estimate is updated to reflect the additional information available. This means that as the design work advances, the cost estimate is hardened. The project and its costs can then be examined to determine the future course of action; whether to continue or not with the project as defined or possibly to alter its scope to meet budgetary requirements. The hardened cost estimate is also a good basis for comparison with bids to assure a fair and balanced bid price.

For a discussion of the cost estimating plan and organization being developed and implemented, see 8) COST ESTIMATES, above at page 9.

Engineering Quality

As of November 1, 1985, the TA's Engineering and Construction Department consisted of 1245 employees of which 857 are in engineering titles.

We agree that the starting salaries for our engineers still lag behind those of the private sector, particularly in the entry level and full engineer level positions. There is little we can do about this because the salary levels are established by the New York City Department of Personnel. Nevertheless, an increase of 5% on July 1, 1985, and an additional 6% increase on July 1, 1986 is expected to provide a more competitive salary base although still not up to the level of private industry.

Notwithstanding the salary restrictions, a candidate for an engineering position must meet certain minimum standards of education and experience to be hired or promoted. All engineers must meet the educational and experience requirements established by the New York City Department of Personnel, under the auspices of the New York State Civil Service Commission. Before any candidate may be appointed, his qualifications must be reviewed and approved by the New York City Department of Personnel. Only candidates who possess degrees from bona fide universities are accepted. The New York City Department of Personnel has a Foreign Education Evaluation Unit which rules on all educational degrees obtained outside of the United States.

In addition to four years of appropriate experience, all full engineers must possess a valid New York State Professional Engineer's license. New York State agencies advertising for engineers have similarly stated requirements.

In 1984 the Engineering Department had an attrition rate of 8%. As of November 1, 1985 the Department's attrition rate for 1985 is 4.3%. It would seem that the increased opportunities presented by the reorganization of the Engineering Department has served as an added inducement for employees to remain with the Transit Authority.

There is a formal evaluation of all managers held twice each year. These evaluations hinge upon the performance and accomplishments of the manager's subordinates. Performance accountability extends to all engineering staff levels. Provisional and probationary engineers who fail to achieve desired performance goals may be terminated. Permanent engineers who fail to achieve desired performance goals are subject to a mandated review system that can result in either suspension, demotion, or termination within the constraints of the State Civil Service Law.

In order to recruit qualified engineers, we have advertised in newspapers, engineering journals and posted within the Authority and other City departments. We have attracted over 1500 candidates, who have been screened and interviewed where qualified. Over 400 positions have been filled as a result of this recruitment effort.

Management Information Systems

The Engineering and Construction Department of the TA has developed an overall Project Control Plan for project cost and schedule control. Within the context of this Project Control Plan, the TA has taken the following steps toward improvement of management information systems.

Existing management systems and reports utilized for project control have been expanded to provide management with up-to-date information on the future course of project activity. Where the prior systems focused on historical data, the enhanced systems focus on forecast data in order to anticipate and avoid problems. Some of the examples of these enhancements in the Capital Project Information and Control System (CPICS) already in use are:

The Engineering and TA Labor Monitoring Report now provides not only actual capital program expenditure data to date, but also information on the estimate to completion, the estimate at completion and the variance at completion.

A computerized bar chart provides a comparison of actual and forecast schedule compared with the original plan.

A single page Project Status Report conveys the status and direction of a project on a monthly basis, as observed by the project manager.

In addition, periodic user training programs in the use of CPICS are now offered. In late 1984 CPICS moved to a new state-of-the-art computer which allows more simultaneous users with fewer mechanical breaks, increased speed of response, and faster processing of jobs. Communication lines have been upgraded to allow more reliable access to the computer. Additional terminals have been provided to allow more users.

In 1985, the CPICS database software was upgraded to the latest available version to allow enhanced capabilities and efficiency of computing resources. CPICS now allows instantaneous printout of small reports at a local printer, or directly on the screen. Larger reports can be routed to a high speed printer and are typically available within 1-2 hours. By reorganizing the Computer Services Organization, the backlog of user requests for assistance has been reduced from one year to less than 2-3 months work.

Future additions to management information systems will include the implementation of a microcomputer-based cost and schedule management system for detailed project control at each of the project managers' offices. The object is to allow the project manager to maintain the more detailed level of control necessary for good cost and schedule management. The advantages of this microcomputer approach are low cost, ease of use, and rapid response to change. Also planned is the creation of an interface between CPICS and the microcomputer cost and schedule management system. This will allow CPICS to be easily updated with current cost and schedule forecasts from the project manager's office, as well as giving the project manager access to the central data base. These improvements are projected to be operational by spring 1986.

10) CHANGE ORDERS

On occasion in the past, changes have been requested by the operations staff during the construction and acceptance stages of a project which have resulted in redesign with increased costs and schedule delays. This has changed. In the Project Management Plan, a procedure entitled "Interdepartmental Interfaces" is included which requires the operations department to review and approve the project at various stages of its development from initial planning and design through construction, testing and acceptance. In this manner, the user departments will have input from the initiation of a project through completion. The result should be a product which is more responsive to the users' needs, and a reduction in the number of changes resulting in redesign with attendant delays and increased costs. In addition, the organizational and procedural changes in project management and operations described at the hearing and in this letter will improve the quality of our in-house design work.

A number of steps are also being taken to obtain better quality work from design consultants. These cover the selection process, oversight, quality assurance audit, and evaluation of consultant performance. The selection process is formalized in the project procedure entitled "Consultant Selection" and includes a detailed rating evaluation of the contractor's submission, past performance and ability to fulfill the requirements of the assignment.

During the design period, the consultant is overseen by the TA project manager, design manager and their staffs. The consultant will also be subject to quality assurance reviews and will be required to follow procedural guidelines in advancing the project. Adherence to these procedures is independently audited by the consultant's own staff and by the TA's quality assurance personnel.

The performance of the consultant is monitored and reported on by the project manager in accordance with the project management procedure entitled "Evaluation of Consultant and Contractor Performance". This evaluation is used to determine the consultant's performance and cooperation and his ability to competently continue with the assigned work. These evaluations will also be utilized when selecting consultants for future work assignments.

11) DESIGN

While it is true that 83 design starts were delayed as of September 1985, it is also to be noted that the designs for 90 projects were started this year. This brings to 90% the proportion of five-year-plan design contracts started by the TA's Engineering and Construction Department (expressed as a dollar value of the total contracts in the five-year program). On the same basis of measurement, the design has been completed for 50% of the capital program contracts in the Engineering and Construction Department.

The decision whether to use in-house design staff or to contract out for design work is based on a number of factors. The first priority is to restore the transit system to a state of good repair in the shortest practicable time. To accomplish this, we must strike a balance between the work that may reasonably be performed by in-house forces and by consultants. We strive to achieve a balance that maintains a constant level of in-house personnel who are trained in and knowledgeable of the TA's requirements. We want to avoid hiring a large number of TA personnel and then having to lay-off many of them if a new capital program is not fully funded.

The principal reason for delay in design starts has been the inordinate length of time consumed in the consultant selection process. We are working to reduce the time required for consultant selection from the previous seven months and more to four months or less.

12) MTA'S NEW QUALITY CONTROL PROCEDURES

The TA Engineering and Construction Department has now identified over 40 new Project Management Procedures, covering all aspects of its work. These procedures outline the activities that are to be performed by project managers, their staff, and others in managing the capital program. A comprehensive training program is being conducted to train staff in the use of these procedures.

In order to verify adherence to these procedures the Director of Quality Assurance will provide oversight on a regular basis. Consultants too will be supervised to verify their compliance with their own or TA procedural requirements as applicable. Corrective action will be required for all deviations from procedures.

Verification activities will include trend analysis which will provide analytic documentation showing the degree of compliance with procedural requirements over time and by procedural activity. Monthly Quality Assurance Management Reports will be prepared showing accomplishments for the month, status of procedural development and maintenance, training conducted, audits conducted, audit results, and recommendations for corrective action.

13) CTL FINAL REPORT

CTL reviewed the design of the modified Girder G-4. There were no as-built drawings available. The TA has approved a contract modification requiring CTL to prepare a supplemental report on the structural integrity and safety of the girder based on as-built conditions.

CTL advises that they were aware of the types of weld required by the design drawings, including calculations of the welds. Since as-built conditions were not available, CTL did not review the actual weld as installed. It should be noted, however, that the field weld was independently inspected at the time of installation by a certified inspection agency (Magnaflux Quality Services) employing magnetic particle techniques. They found the weld to have no evidence of flaws.

CTL advises that they may have been misunderstood concerning the matter of waterproofing. They never intended their remarks to be interpreted as meaning that the tunnel needs to be completely waterproofed. It is not reasonably possible or required to waterproof the tunnel completely and we are not prepared to undertake such a project. CTL's opinion is that leakage of the tunnel in the area around Girder G-4 can be controlled by sealing cracks and thus protecting the structural integrity and durability of Girder G-4 from the effect of chemicals in the water. Leakage that occurs after sealing of the cracks will be collected for removal from the tunnel by pumping.

With respect to the FBI report on the "cut beam," the TA requested a copy of the metallurgist's report from the FBI immediately after an article appeared in the May 15, 1985 edition of Newsday. The request was denied. The MTA first received a copy of the FBI report on November 6, 1985 from Senator D'Amato's office. The report is presently being reviewed. Although we question some of the statements and conclusions in the report, our review has not progressed sufficiently to permit us to respond at this time. The FBI report has now been furnished by us to CTL to be analyzed as part of their supplemental work. The report was also furnished for comments to Professor J.J. Connor of the Massachusetts Institute of Technology who previously analyzed Girder G-4 at my request and found that it met design requirements.

It is our desire, as it is yours, to get all open questions answered surrounding the structural integrity of the 63rd Street tunnel and Girder G-4. In the spirit of answering these questions in a timely fashion, particularly where the possible safety of the public and construction personnel is involved, we are chagrined that the questions raised by the FBI's report were not transmitted to us earlier so that they might have been part of our initial evaluation.

PREPARED STATEMENTS

[The prepared statements of Robert R. Kiley, David Gunn, and Michael C. Ascher follow:]

Statement of Robert R. Kiley

I welcome the opportunity to appear before the Senate Subcommittee on transportation to discuss the 63rd Street tunnel. I share your interest today in attempting to make some basic sense out of what many see as a discouraging example of government's inability to do anything on time or within budget.

Dave Gunn and I have been on the scene for less than two-years. We, too, are unclear about certain aspects of the long history of this project, which had its beginnings more than two decades ago in the mid-1960's. The principal business of the New York City subway system then, as now, was getting people to and from work. Transportation planners and policy-makers at the city, regional and state level recognized the need for faster, more efficient transportation from the outer reaches of the Bronx, Queens and Brooklyn into Manhattan's central business district. This recognition eventually grew into MTA's New Routes Program, which at its most expansive was to add 11 new routes and 40 additional route miles to the subway system. It was estimated that the program would take 10 years and $1.3 billion to complete.

Over time the hard realities of difficult construction, unprecedented inflation, municipal fiscal constraint and changing public policy eroded the substance of the New Routes Program. Today, we are left with three widely disconnected holes in the ground. One we euphemistically refer to as the Second Avenue Subway. The other two are the 63rd Street tunnel extending from West 57th Street in Manhattan under the East River and Roosevelt Island to 29th Street in western Queens; and the Archer Avenue tunnel in eastern Queens. These three new routes, totalling only 5.3 miles, have taken 16 years and more than $1 billion to bring to their current incomplete state.

THE ARCHER AVENUE TUNNEL AND THE 63RD STREET TUNNEL ARE AT EITHER END OF WHAT WAS TO BE A MASSIVE NEW ROUTE GATHERING COMMUTERS FROM THE RAPIDLY GROWING BOROUGH OF QUEENS AND CARRYING THEM UNDER THE EAST RIVER -- SOME 36,500 OF THEM PER PEAK HOUR -- INTO MANHATTAN. BOTH ENDS OF THAT NEW ROUTE ARE NEARING COMPLETION, BUT THE VITAL LINK BETWEEN THEM MAY NEVER BE BUILT. NOT BECAUSE THERE IS NO NEED FOR IT -- INDEED THE NEED TODAY IS FAR GREATER THAN IT WAS BACK IN THE MID-1960'S -- BUT BECAUSE THERE IS NO MONEY. AS A RESULT, IF THE 63RD STREET TUNNEL WERE OPEN TODAY, IT WOULD CARRY NOT 36,500 RIDERS PER PEAK HOUR FROM QUEENS TO MANHATTAN, BUT A MERE 600.

CLEARLY, THIS IS A SORRY TALE AND A MAJOR EMBARRASSMENT. WHAT WENT WRONG? HAVE WE LEARNED ANY LESSONS OVER THE PAST TWENTY YEARS? COULD THIS HAPPEN AGAIN? IS THE MTA'S CURRENT $8.5 BILLION CAPITAL PROGRAM IN ANY BETTER SHAPE THAN THE NEW ROUTES PROGRAM THAT PRECEEDED IT? THESE ARE THE TOUGH, RELEVANT QUESTIONS THAT I WOULD LIKE TO ADDRESS IN MY TESTIMONY THIS MORNING.

IT WAS 18-YEARS AGO THIS MONTH, IN NOVEMBER OF 1967, THAT A $2.5 BILLION STATE TRANSPORTATION BOND ISSUE WAS APPROVED, WITH $600 MILLION IN IT FOR THE NEW ROUTES PROGRAM. JOHN LINDSAY WAS MAYOR, NELSON ROCKEFELLER WAS GOVERNOR, AND LYNDON JOHNSON WAS PRESIDENT. ROBERT KENNEDY WAS THE JUNIOR SENATOR FROM NEW YORK. ALTHOUGH VIETNAM WAS BEGINNING TO TAKE ITS TOLL ON AMERICA'S SELF-CONFIDENCE, AND ALTHOUGH URBAN TURMOIL WAS ONLY MONTHS AWAY, THE COUNTRY AND THE CITY WERE STILL IN A "CAN-DO" MOOD. "GUNS AND BUTTER," "GROWTH AND EXPANSION," "GOVERNMENT AND PROGRESS" WERE UNQUESTIONED BYWORDS FOR MOST AMERICANS. AS A PEOPLE, WE WERE ONLY JUST BEGINNING TO RUB UP AGAINST THE LIMITATIONS THAT MADE THE '70S SUCH A DREARY, DIFFICULT DECADE.

ALTHOUGH THE NEW ROUTES PROGRAM BEGAN WITH STATE AND CITY FUNDING, FEDERAL DOLLARS SOON BECAME ITS LIFEBLOOD. IT IS IMPORTANT

TO REMEMBER THAT UNTIL 1975, FEDERAL TRANSIT FUNDS COULD BE USED ONLY FOR NEW CONSTRUCTION AND NEW EQUIPMENT. AS WITH SO MANY OTHER FEDERAL PROGRAMS GROWING OUT OF THE GREAT SOCIETY ERA, INCLUDING THOSE FOR HIGHWAY, HOUSING, WATER AND SEWER PROJECTS, THE EMPHASIS WAS ON NEW FACILITIES. EVEN THOUGH URBAN INFRASTRUCTURE WAS CRUMBLING ACROSS AMERICA, FEDERAL FUNDS WERE NOT BEING PROVIDED FOR ITS MAINTENANCE OR REHABILITATION.

A CASE CAN BE MADE THAT THE NEW ROUTES PROGRAM NEVER MADE ANY SENSE. EVEN IN THE MID-'60S VAST SEGMENTS OF THE EXISTING NEW YORK CITY SUBWAY SYSTEM WERE NOT RECEIVING THE ATTENTION THEY DESERVED. ONE CAN ARGUE THAT THE EXISTING SYSTEM SHOULD HAVE RECEIVED EVERY CAPITAL DOLLAR THAT WAS ALLOCATED TO BUILD NEW ROUTES. BUT SUCH WAS NOT THE COMMON WISDOM IN AN ERA WHEN THE BOOMING GROWTH OF OUTER SUBURBS MASKED DISINVESTMENT IN THE INNER CITY, IN AN ERA WHEN IT WAS EASIER TO GARNER SUPPORT FOR A NEW HIGHWAY OR A NEW HIGH SCHOOL OR A NEW BRIDGE -- OR EVEN A NEW SUBWAY TUNNEL -- THAN IT WAS TO GENERATE ENTHUSIASM FOR REHABILITATING EXISTING STRUCTURES OR MAINTAINING EXISTING EQUIPMENT. IN THOSE DAYS, WE WERE STILL POSSESSED OF A FRONTIER MENTALITY THAT LED US TO NEGLECT THE ESTABLISHED IN FAVOR OF THE NEW, AND FEDERAL FUNDING PRIORITIES REFLECTED THAT VIEW. THAT MENTALITY MAY HAVE WON THE WEST, BUT IT NEARLY LOST US OUR OLDER NORTHERN AND EASTERN CITIES.

SO, IN RETROSPECT, THE INITIAL STRATEGIC DECISION TO GO FORWARD WITH A MAJOR CAPITAL INVESTMENT IN NEW ROUTES INSTEAD OF INVESTING THOSE DOLLARS IN THE REHABILITATION AND MAINTENANCE OF THE EXISTING SYSTEM MAY HAVE BEEN A MISTAKE. I HONESTLY BELIEVE THAT THE MAYOR AND THE GOVERNOR AND THE STATE LEGISLATURE AND THE MTA BOARD WOULD NOT MAKE THAT MISTAKE AGAIN. AS INDIVIDUALS AND AS INSTITUTIONS, ALL OF US HAVE LEARNED THE HARD LESSONS OF THE '70S. BUT, IN MY OPINION, IN 1967 WHEN THE STATE TRANSPORTATION BOND ISSUE WAS PASSED, AND EVEN TWO YEARS LATER IN 1969 WHEN CONSTRUCTION ON THE 63RD STREET TUNNEL ACTUALLY BEGAN, NEITHER ELECTED NOR APPOINTED OFFICIALS, NOR THE PUBLIC AT LARGE, REASONABLY COULD HAVE BEEN

EXPECTED TO FORSEE THE EXPLOSIVE INFLATION OR THE CRIPPLING CITY FINANCIAL CRISIS THAT LEFT THE PURPOSEFUL OPTIMISM OF THE NEW ROUTES PROGRAM IN SHAMBLES.

THE DECISION TO PROCEED WITH NEW ROUTES HAVING BEEN MADE, HOW WELL WAS THE PROGRAM CARRIED OUT?

THROUGH OUR OWN INSPECTIONS AND THOSE OF AN INDEPENDENT CONSULTANT, CONSTRUCTION TECHNOLOGY LABORATORIES OF SKOKIE, ILLINOIS, WHO WERE RETAINED WITH THE ADVICE AND CONCURRENCE OF THE URBAN MASS TRANSPORTATION ADMINISTRATION, WE HAVE DETERMINED THAT THE 63RD STREET TUNNEL SEGMENT OF THE NEW ROUTES PROGRAM DOES MEET THE ESSENTIAL STANDARD FOR SUCH A PUBLIC WORK: IT IS STRUCTURALLY SAFE AND SOUND AND WILL HAVE A USEFUL LIFE OF SUFFICIENT LENGTH TO MAKE REASONABLE THE THOUGHT OF PUTTING IT INTO REVENUE SERVICE. THE INDEPENDENT CONSULTANT'S REPORT ON ARCHER AVENUE WILL NOT BE AVAILABLE UNTIL LATER THIS MONTH, AND I SHOULD LIKE TO RESERVE JUDGMENT ON THAT NEW ROUTES SEGMENT UNTIL THEN. THE SECOND AVENUE SEGMENT ALSO WILL BE TREATED IN A SEPARATE REPORT.

TO FOCUS ON THE 63RD STREET TUNNEL, LET ME FIRST ACKNOWLEDGE THE MANY QUESTIONS THAT HAVE BEEN RAISED ABOUT POSSIBLE DEFICIENCIES IN ITS DESIGN, CONSTRUCTION AND MAINTENANCE. MISTAKES WERE MADE, BUT WE HAVE LEARNED FROM THOSE MISTAKES, AND WE HAVE PUT INTO PLACE ADEQUATE SAFEGUARDS TO ENSURE THAT FUTURE PROJECTS DO NOT EXPERIENCE THE SAME PROBLEMS. AS A RESULT, WE CAN BE REASONABLY ASSURED THAT MTA'S FIVE-YEAR CAPITAL PROGRAM WILL DELIVER ON THE SERVICE IMPROVEMENTS IT HAS PROMISED.

I SHALL ATTEMPT TO SUMMARIZE THE LESSONS WE HAVE LEARNED AND WHAT WE ARE DOING AS A RESULT.

FIRST, WE HAVE LEARNED THAT RETURNING OUR EXISTING SYSTEM TO A STATE OF GOOD REPAIR AND MAINTAINING IT IN THAT CONDITION IS AND

MUST ALWAYS REMAIN OUR FIRST PRIORITY. NEW ROUTES ARE FOR ANOTHER GENERATION. OUR CHALLENGE IS TO RESTORE SAFETY, MECHANICAL RELIABILITY AND CIVILITY TO THE NEW YORK CITY SUBWAY SYSTEM.

SECOND, WE HAVE LEARNED THAT THE OLD FUNCTIONAL ORGANIZATION OF THE TRANSIT AUTHORITY'S ENGINEERING AND CONSTRUCTION DEPARTMENT SIMPLY WAS NOT SUFFICIENT TO SUPPORT THE WEIGHT OF TODAY'S EXTENSIVE, EXPENSIVE CAPITAL PROJECTS. THAT DEPARTMENT HAS BEEN REORGANIZED ON A PROGRAM/PROJECT MANAGER BASIS. WE NOW HAVE INDIVIDUALS WHO ARE RESPONSIBLE FOR AND CAN BE HELD ACCOUNTABLE FOR THE PROGRESS OF SPECIFIC PROJECTS. UNDER THE OLD ORGANIZATION, MANY INDIVIDUALS HAD RESPONSIBILITY FOR LITTLE PIECES OF EACH PROJECT. PREDICTABLY, WHEN EVERYONE WAS RESPONSIBLE, NO ONE WAS ACCOUNTABLE. WE HAVE CURED THAT PROBLEM.

THIRD, WE HAVE LEARNED THAT REGARDLESS OF ITS ORGANIZATIONAL STRUCTURE, THE TA'S ENGINEERING AND CONSTRUCTION DEPARTMENT CANNOT BE OPERATED SUCCESSFULLY ON AN AD-HOC BASIS. AS YOU KNOW SENATOR FROM PERSONAL BRIEFINGS IN YOUR OFFICE, WE HAVE MOVED FORCEFULLY TO IMPLEMENT EFFECTIVE, UP-TO-DATE POLICIES AND PROCEDURES GOVERNING THE PLANNING, DESIGN AND CONSTRUCTION OF CAPITAL PROJECTS. AND WE ARE IMPRESSING UPON OUR PEOPLE THEIR ABSOLUTE OBLIGATION TO FOLLOW THESE POLICIES AND PROCEDURES AND TO DOCUMENT PROJECT DECISIONS.

FOURTH, WE HAVE LEARNED THAT A SUCCESSFUL CAPITAL PROJECT REQUIRES CLOSE COMMUNICATION, COORDINATION AND COOPERATION BETWEEN THE TRANSIT AUTHORITY'S ENGINEERING AND CONSTRUCTION DEPARTMENT ON THE ONE HAND AND ITS OPERATING DEPARTMENTS ON THE OTHER. THIS APPROACH IS BEING IMPRESSED UPON TA PERSONNEL FROM THE TOP DOWN. IN THE CASE OF THE 63RD STREET TUNNEL, AS WORK DRAGGED ON OVER THE YEARS, STRUCTURES AND EQUIPMENT PROVIDED UNDER THE CONSTRUCTION CONTRACT BEGAN TO REQUIRE MAINTENANCE. THE RECORD SHOWS THAT DURING THE CITY'S FISCAL CRISIS THE ENGINEERING DEPARTMENT MADE NUMEROUS REQUESTS OF ITS OPERATING COUNTERPARTS TO BEGIN MAINTENANCE ON THE

TUNNEL. THOSE REQUESTS WERE DENIED, AND THE RESULTING DETERIORATION AND DAMAGE WILL BE EXPENSIVE TO REPAIR.

HOWEVER, AND THIS IS A POINT WELL WORTH NOTING, THE OPERATING DEPARTMENTS DID NOT DECLINE OUT OF MEAN-SPIRITEDNESS, THEY SIMPLY DID NOT HAVE THE RESOURCES. AS SEVERAL MEMORANDA FROM THE TA'S CHIEF OPERATIONS OFFICER TO THE CHIEF ENGINEER MAKE CLEAR, DURING THE CITY'S FISCAL CRISIS THE OPERATIONS SIDE OF THE HOUSE DID NOT HAVE SUFFICIENT MANPOWER OR FUNDS TO TEND TO THE STRUCTURES AND EQUIPMENT THAT WERE IN DAILY USE, LET ALONE TO MAINTAIN THOSE IN A TUNNEL THAT WOULDN'T SEE ITS FIRST SUBWAY CAR FOR MANY YEARS. WHEN BASIC SAFETY INSPECTIONS AND ROUTINE MAINTENANCE ON EQUIPMENT IN SERVICE EVERY DAY WERE BEING NEGLECTED, HOW COULD SCARCE RESOURCES BE DIVERTED TO MAINTAIN A PARTIALLY FINISHED TUNNEL? IN THE TRANSIT BUSINESS AS IN MOST OTHERS, OPERATING PRIORITIES MUST DRIVE CAPITAL PROJECTS OR THOSE PROJECTS WILL NEVER RECEIVE THE ATTENTION THEY DESERVE.

FIFTH, WE HAVE LEARNED THAT CAPITAL PROJECTS REQUIRE REGULAR, IN-DEPTH REVIEW AND OVERSIGHT AT ALL STAGES OF THEIR DEVELOPMENT IF THEY ARE TO BE COMPLETED SUCCESSFULLY. SUCH A SYSTEM OF REVIEW AND OVERSIGHT IS IN PLACE FOR ALL OF THE MTA'S FIVE-YEAR CAPITAL PROGRAM PROJECTS.

THE TA'S NEW POLICIES AND PROCEDURES PRODUCE THE DOCUMENTATION THAT SUBSTANTIVE REVIEW AND OVERSIGHT REQUIRE. DETAILED MONTHLY REPORTS ON EACH OF THE TA'S MORE THAN 350 CAPITAL PROJECTS ARE PREPARED AND ASSEMBLED IN A SINGLE BOOK. INDIVIDUAL REPORTS INCLUDE A BASIC PROJECT DESCRIPTION, INFORMATION ON PROGRESS AS MEASURED AGAINST SCHEDULE AND BUDGET AND A BRIEF STATEMENT OF PROJECT HIGHLIGHTS FOR THE MONTH. THESE REPORTS ARE COLOR-CODED TO SIGNIFY PROJECTS WITH NO PROBLEMS; THOSE WITH INCIPIENT PROBLEMS; AND THOSE WITH SIGNIFICANT PROBLEMS THAT WILL ADVERSELY AFFECT THE AUTHORITY'S

ABILITY TO BRING THE PROJECT IN ON TIME OR WITHIN BUDGET. THESE REPORTS ARE THE BASIC BUILDING BLOCKS IN AN EXTENSIVE MANAGEMENT INFORMATION SYSTEM DESIGNED TO COMMUNICATE ESSENTIAL FACTS ABOUT CAPITAL PROJECTS TO SENIOR MANAGERS AT THE TA AND MTA.

A PARALLEL SERIES OF MONTHLY AND QUARTERLY REPORTS ARE MADE, ON AN INDIVIDUAL PROJECT BASIS, TO THE MTA BOARD, UMTA'S REGIONAL ADMINISTRATOR AND TO THE STATE'S MTA CAPITAL PROGRAM REVIEW BOARD.

WE DO NOT CONFUSE REVIEW AND OVERSIGHT WITH PROJECT MANAGEMENT. DIRECTING DAY-TO-DAY ACTIVITY ON INDIVIDUAL CAPITAL PROJECTS IS THE TRANSIT AUTHORITY'S RESPONSIBILITY. BUT RIGOROUS REVIEW AND OVERSIGHT BY THOSE INSIDE AND OUTSIDE THE MTA GUARANTEES THAT IF THINGS BEGIN TO GO BADLY, WE, AS WELL AS THE PUBLIC AND ITS ELECTED AND APPOINTED OFFICIALS, WILL KNOW EARLY ENOUGH TO TAKE CORRECTIVE ACTION.

IF SUCH AN EXTENSIVE SYSTEM OF REVIEW AND OVERSIGHT HAD BEEN IN PLACE IN THE PAST, WE WOULD HAVE KNOWN SOONER AND WITH MUCH MORE CERTAINTY ABOUT THE PROBLEMS WITH THE 63RD STREET TUNNEL. THE CHASM BETWEEN CAPITAL AND OPERATING IMPERATIVES THAT LEFT EXPENSIVE EQUIPMENT MOLDERING IN A DARK, DANK TUNNEL FOR TEN YEARS MIGHT HAVE BEEN BRIDGED IN A TIMELY, COST-EFFECTIVE FASHION. AND THE FUNDAMENTAL QUESTION OF HOW THE NEW ROUTES PROGRAM MESHED WITH THE REGION'S EVOLVING FISCAL REALITY MIGHT HAVE BEEN RAISED EARLIER THAN 1979, TEN YEARS AFTER CONSTRUCTION COMMENCED, WHEN MAYOR KOCH AND THEN MTA CHAIRMAN HAROLD FISHER MADE THE NECESSARY DECISION TO CURTAIL THE 63RD STREET TUNNEL PROJECT AT 29TH STREET IN QUEENS.

WHERE DOES ALL THIS LEAVE US? THE 63RD STREET TUNNEL IS 96% FINISHED. CONSTRUCTION MUST BE COMPLETED AND SOME REMEDIAL WORK

DONE TO REPAIR DEFICIENCIES IN PAST CONSTRUCTION AND TO COMPENSATE FOR DEFERRED MAINTENANCE. BY THE END OF THE YEAR WE SHOULD KNOW HOW LONG THAT WILL TAKE AND HOW MUCH IT WILL COST. THEN WE WILL FACE THE DECISION AS TO WHETHER WE SHOULD ACTUALLY PUT THE TUNNEL INTO SERVICE, AT AN ESTIMATED ANNUAL COST OF $10-15 MILLION, TO CARRY A FEW HUNDRED PEOPLE TO MANHATTAN AT RUSH HOUR.

AND IF WE DECIDE NOT TO OPERATE SERVICE THROUGH THE TUNNEL, HOW MUCH WOULD IT COST TO MOTHBALL THE FACILITY? WOULD THE FEDERAL GOVERNMENT THEN REQUIRE US TO REPAY THE FEDERAL SHARE SPENT ON CONSTRUCTION? WILL THERE BE ANOTHER NEW ROUTES PUSH TO BUILD THE SO-CALLED "LOCAL CONNECTION" TO SUBWAY LINES IN QUEENS, EVEN THOUGH THE EXISTING SYSTEM IS STILL STARVED FOR CAPITAL FUNDS TO BRING IT BACK TO A STATE OF GOOD REPAIR? CLEARLY, WE HAVE NOT HEARD THE LAST OF THE 63RD STREET TUNNEL.

FOR MY PART, I AM SATISFIED THAT WE ARE TAKING EVERY REASONABLE STEP TO ENSURE THAT THE MTA NEVER FINDS ITSELF IN SUCH A PREDICAMENT AGAIN. THAT DOESN'T BRING BACK A BILLION DOLLARS, NOR DOES IT DO MUCH TO RESTORE CONFIDENCE IN A TROUBLED AGENCY. BUT IT DOES ENSURE THAT TWENTY YEARS FROM NOW NO ONE WILL BE WONDERING HOW WE LOST OUR WAY WITH THE MTA'S CAPITAL PROGRAM IN THE 1980'S.

STATEMENT OF DAVID L. GUNN

Mr. Chairman, distinguished members of the Senate Subcommittee on Transportation, I am David L. Gunn, President of the New York City Transit Authority. I am here, accompanied by senior members of my staff, to answer any questions that you may have concerning the status of the Transit Authority's New Routes program.

This past Wednesday marked the 16th anniversary of the start of New Routes construction. The first contract was awarded on October 30, 1969 for work on the 63rd Street East River Tunnel crossing, linking Manhattan, Roosevelt Island and Queens. This was to be the start of a 10-year, $1.3 billion program that was to include the construction of 11 new routes, representing 40 additional route miles. As you are already aware, the program was reconfigured on several separate occasions as a result of spiralling cost estimates and fiscal restraint brought on by the New York City fiscal crisis in the mid 1970's.

When I joined the Transit Authority in early 1984, the program consisted of three routes -- one called the East 63rd Street Line and two others making up the Southeast Queens Extension, also referred to as the Archer Avenue Line. These three routes contain 5.3 route miles. Just over $1 billion had been spent on the work which had advanced to about 90% complete. At a briefing for Chairman Kiley of the Metropolitan Transportation Authority and me in April 1984, our engineering and construction department was projecting completion dates of April 1985 for East 63rd Street and September 1985 for Southeast Queens. No problems whatsoever were identified.

In the months that followed, as the operating departments were preparing to take over the operations of these routes, I began receiving a much different assessment on the completion status of these facilities than had been provided to me by the engineering department. A number of serious questions were raised over the quality of completed work and its possible affect on our ability to provide safe and reliable service to our future riders of the new routes. These concerns include such items as: cracks in concrete, water leakage, and moisture damage to installed equipment.

We have taken suitable actions to assure that these concerns are fully resolved. An independent consultant has been engaged to fully evaluate the structural integrity and durability of the new routes. A separate consultant is in the process of being selected to independently evaluate the durability of mechanical and electrical equipment and track that may have suffered the deleterious effects of an environment of high relative humidity. Special reviews are also being done by in-house design and operating personnel. On completion of these evaluations, subject to the continued availability of funds, we plan to make any necessary modifications and complete the construction required for operation of the 63rd Street and Southeast Queens Lines.

In summary, there are two factors that in my view have contributed to the problems we have in our New Routes program. First is, the effect that spiralling costs had during periods of decreasing availability of funds. Second is, certain organizational weaknesses within the Transit Authority's engineering and construction department.

I have with me some materials which contain in further detail the background, current status and remaining work of the new routes and an overview of a number of changes made in the engineering and construction department. Should there be sufficient time, Mr. Michael C. Ascher, vice president and chief engineer can present them. We also have available for distribution a chronological listing of significant new routes documents with a brief description of the contents of each for the period January 14, 1965 to the present time. I believe a perusal of these will give you additional insight into the background events.

I will be glad to answer any questions you may have.

STATEMENT OF MICHAEL C. ASCHER, P.E.

Mr. Chairman, distinguished members of the Senate Subcommittee on Transportation, my name is Michael C. Ascher. I joined the New York City Transit Authority in December 1984 as deputy vice president -- engineering and construction, and was appointed vice president and chief engineer this June.

Over the past 10 months I, along with members of my staff, have introduced a number of changes in the engineering department. These changes are intended to improve control and administration of the Capital Program. In my testimony before you today I would like to more fully acquaint you with these changes so that it may add to the perspective from which a comparison can be made to engineering department practices during the planning, design and construction phases of the new routes program. In the interest of conserving time, I will limit my remarks to several aspects dealing with organizational structure, quality assurance and project management systems.

Perhaps the most obvious and far reaching of the changes made in the engineering department is the shift away from a functionally structured organization to a project manager type organization. Traditionally, the department was set up along three separate and distinct functional lines for project planning, design and construction. As a project advanced through each of these phases it sort of changed ownership -- the work fell under the responsibility of a different deputy reporting to the chief engineer. This means that there was one individual -- the chief engineer -- who was directly in charge of overall project performance.

As the character and complexity of the capital projects increase, there is a need to reduce the span of control that a manager has over them. To do this and maintain a single point of contact for all matters relating to project performance led us to the project manager organization. The course was set in that direction somewhat over a year ago.

Within our new system of clearly defined responsibilities and authorities, our 28 project managers are accountable for overall project performance. They are responsible for initiating the development of project concepts by translating operating department requirements into feasibility studies and project scope statements, budgets and schedules. They then must advance these projects beyond concepts through design, construction and turnover to operations -- all along providing necessary analyses, advice and commentary on management issues and cost and schedule performance. The project manager also conducts on-going communications with operations department representatives, contractors, City agencies, community groups, designers (in-house and consultant) and insures adherence to all governing rules and regulations and professional engineering standards.

The engineering department is an organization comprised of a permanent work force that will soon peak at just over 1300 personnel -- comparable in size to some of the largest and most prominent consulting engineering and construction companies in the world. Within the technical community it is a widely accepted practice for management to monitor the process by which engineering and construction work is carried out. It follows, therefore, that there must exist a systematic and disciplined approach to the work that fosters the kind of documentation trail that can be surveilled on a regular basis. It is for this reason that we have introduced new procedures that will soon total more than 40, which describe how different aspects of our work is to be done and how it is to be authenticated by documentation.

There is a basic philosophy that underlies the very essence of what we are trying to accomplish. That is, our endeavor to "build" quality into the product rather than relying solely on our ability to inspect it in after the fact. Sadly this is precisely what we are attempting to do today on the new routes, as we try to reconstruct what took place over a period of nearly two decades.

As a means to verify compliance to our new procedures, we have established a quality assurance unit within the engineering department. Our quality assurance personnel will conduct surveillances at least once annually for each procedural area in each organizational unit of our department. Noncompliance will be documented requiring corrective actions to be committed to by the responsible party. You will be interested to know that we have already extended this surveillance function to cover design and construction inspection activities being carried out by consultants. The only difference in the character of the surveillance is that we are verifying compliance to the consultants' procedures.

I would like to add one further personal note on the subject of quality assurance. That is, to the extent that our surveillance activities point to a noncompliance which in my judgement could compromise the quality of our work, I can and will issue "stop work" orders until such time that I am satisfied that corrective actions will yield the results that we are properly striving for.

The thrust of the engineering department's cost and schedule control systems have been redirected in a manner that is for the first time providing our project managers with the kinds of tools needed to track project performance indicators (cost and schedule) and to forecast the direction that each project is taking. This means that our project managers are now equipped with the systems to help them anticipate problems before they occur, affording them the opportunity to introduce corrective actions in a timely fashion.

Previously, our department was dependent upon management systems that were an outgrowth of accounting systems that captured historical costs and data. There is an analogy that I often make which helps to better understand the limitations of such a system. If I asked you to drive up the New York Thruway to Albany but only allowed you to rely on your rear view mirror -- that is to see where you were -- chances of you arriving at your destination on time, let along at all, would be remote. By making our management systems forward looking, we benefit not only from historical data from which trends can be extracted, but we lay out a current picture of the road map before us so that we may steer clear of the obstacles that can be encountered on route.

Because of the large number of projects that comprise the capital program, we have devised a single page Project Status Report which is used by our project managers each month to keep senior management apprised of project performance. The report, which is widely circulated includes financial data, critical milestones, progress measurement and projections of future activity, significant events, problems and corrective actions. Depending upon the outlook for the project, the project managers characterize the overall condition according to color code; green, yellow or red. The actual reports are printed on color stock according to the selected designation.

Let me illustrate to you the value of what we are attempting to accomplish. If you were to analyze our current Project Status Reports (a book about the size of the Manhattan telephone directory), you would see that about one-fifth of our 5-year capital projects are printed on "red" pages. Of these, more than one-half represent concerns that our project managers have over future events -- thus permitting corrective actions to be identified and implemented in a timely fashion to help avoid the problem in the first place, or if unavoidable, to mitigate its attendant effects. Although not a perfect system, we do expect it will reduce the number of occasions in which we are reacting to problems after they occur.

The management reforms that I have described to you are not to be viewed in the sense of offering a revelation in the management of large capital intensive projects. Nor should they be. They represent the kinds of "basics" that are clearly needed by any organization -- public or private -- to adequately embrace the control of its design and construction projects.

While considerable progress has been made over the past year in introducing changes in the engineering department, the fact is we are now only in the early stages of its implementation. This comes at a time nearly four years into a 5-year capital program when public patience is growing sparingly thin. Change will be a gradual process. There are numerous projects with varied technical, financial, institutional and political challenges and I would be less than candid to suggest that our new project managers are equally capable of dealing with these varied challenges.

We have brought the Transit Authority's engineering department into the 1980's by equipping it with the kinds of tools needed to properly control its work. The real proof, however, is still before us. I have every expectation that the kinds of problems encountered in the course of the new routes program will not be repeated in the environment in which we are now working.

Senator D'AMATO. We will take a 10-minute recess.

[A brief recess was taken.]

SCHIAVONE CONSTRUCTION CO.

STATEMENT OF TED GEISER, ATTORNEY FOR SCHIAVONE CONSTRUCTION CO.

Senator D'AMATO. At this time, the next witnesses are Mr. Frank McArdle, general manager of the General Contractors Association of New York; Tom Bock, engineer, Schiavone Construction Co.; and Ruben Samuels, vice chairman, Thomas Crimmins Contracting Co.

If those people are available, I would suggest that they come on up. Otherwise we will move on to the next panel.

Mr. GEISER. Mr. Chairman, my name is Ted Geiser. I am counsel——

Senator D'AMATO. Why don't we hold on just for a moment because I want to have those doors closed so I can hear you and give you the attention that your remarks deserve.

Yes, sir?

Mr. GEISER. My name is Ted Geiser. I am counsel for Schiavone Construction Co., which is the sponsoring partner of the joint venture which constructed sections 5A and 5B of the 63d Street tunnel. And I will only take a moment of your time in the interest, believe it or not, of expediency.

Senator D'AMATO. Let me say this to you. First of all, if you have a prepared statement with you, we are willing to accept it and incorporate it into the record. If you wish to submit any additional statement, the record will be open for at least 2 weeks.

Mr. GEISER. We understand that, Senator.

First, I would like to thank your staff, particularly Ms. Miano and Mr. McCann, for their courtesy and their kindness to me personally and to my client in being helpful to us, so that we could assemble rapidly the materials which we understand you wanted. And I hope that they will view our cooperation as reciprocal. Over the past several years my client has never failed to cooperate on a request with any proper governmental body, State or Federal; this is no exception. I want to assure you, Senator, that that cooperation will continue. With anything your staff wants, they need only call me and it will be delivered forthwith.

May I introduce—because I know you are interested in facts, not what I have to say. May I introduce Mr. Samuels. We have submitted a prepared statement. Ruben Samuels, who attended the Massachusetts Institute of Technology, has a degree in civil engineering from Dartmouth in 1946, a masters in civil engineering from Harvard in 1948, and was a doctoral candidate and teaching assistant at Harvard from 1951 to 1954. Mr. Samuels was on 5A and 5B throughout the course of the work. He has the credentials and the information, I think, you have asked for.

THOMAS CRIMMINS CONTRACTING CO.

STATEMENT OF REUBEN SAMUELS, VICE CHAIRMAN

Mr. SAMUELS. Thank you. I was full time on the job from February 1978 to February 1983. For the 5 years I was on the job and every day thereafter my concentration was on 5A, leading over to 5B as that work progressed.

I am vice chairman of Thomas Crimmins Contracting Co., one of the three contractors comprising the joint venture that constructed sections 5A and 5B of the East 63d Street subway. Please bear in mind that we only constructed 2 of the 7 major civil contracts and that the 7 sections were constructed by various joint ventures involving more than 11 contracting organizations. My comments in response to your letter are, of course, limited to 5A and 5B.

We have had, and continue to have, problems with the Transit Authority in regard to the management and administration of the contracts we have performed on the 63d Street tunnel and elsewhere. We feel, however, that these problems are common in varying degrees in dealing with large public agencies. We understand the purpose of this hearing as twofold: One, the justification for the construction of the tunnel; and, two, the quality of the work performed in building it.

On the first point, we have nothing to say as it is not for us to participate in that part of the discussion. On the second point we are confident in the knowledge of having carried out this extremely complex work in full compliance with our contract obligations. The publication during the last few days of the conclusions reached by an independent consulting engineer engaged by UMTA and/or the TA supports our position. The conclusion of these studies will vindicate us more credibly than we could be engaging in a limited technical discussion on this occasion.

There are several issues, however, upon which we feel we should comment. One is that there has been a basic difficulty with the Transit Authority trying to shift to the contractor the burden of the ultimate success of the owner's design, rather than limiting the contractor's responsibility to the performance of his contract. This can be illustrated by the issue regarding the adequacy of the waterproofing. The contract documents contain a detailed specification for an elastomeric waterproofing compound and the method of application. As required by the specifications, the materials and the workmanship were verified for contract compliance by the Transit Authority. In all areas where they found the waterproofing installed by our subcontractor did not meet the minimum thickness as initially applied, additional elastomeric compound was installed as directed by the engineer. Those quotations are out of the specs, specifically——

Senator D'AMATO. I understand.

Mr. SAMUEL [continuing]. And at no additional expense to the authority. We complied with these directives, thereby satisfying the full extent of our contract obligations. It must be noted that the satisfaction of the minimum thickness requirement could not be assured by the overapplication of the material since the specifications also contain a maximum fitness, which was only 50 thousandths of an inch greater than the minimum permissible thickness. It should also be noted that there is a history of the specified waterproofing not being able to produce a water-tight project, let alone a perfect one.

It appears that a few pieces of correspondence related to our contracts 5A and 5B have been selected for presentation to this committee. We are concerned that if these are taken out of the proper context, which can only be understood by reviewing the many other documents on the same subject, wrong impressions and judgments will almost inevitably result.

With regard to your request for comments on the Transit Authority's quality control, the issue of the level of quality control performed by an owner is not a subject matter that is within the province of a construction contractor working under the type of specifications used by the Transit Authority. The recent reports by Construction Technology Laboratory indicate that the concrete and other materials were found to be of high quality. It would, therefore, appear that the program used by the Transit Authority produced a satisfactory result. Whether or not a more detailed quality control program was justified is a matter beyond the scope of a construction contractor.

Although neither I nor my company was involved in the construction of section 7 of the Archer Avenue project, I have been provided with Schiavone's information regarding the so-called undocumented or missing concrete—item three of your letter. Schiavone has delivery receipts and have paid their supplier for more than 82,000 cubic yards of concrete, which is 10,000 cubic yards more than the quantity approved for payment by the Transit Authority. What happened to the Transit Authority's delivery receipts and inspection reports, the contractor does not know. Keep in mind that payment to Schiavone was only made for the concrete measured in place in accordance with the plans and specifications, and payment was not based on delivery receipts.

I am proud to have played a role in these two complex projects and in the pioneering use of a tunnel-boring machine for subway construction in Manhattan at a saving of more than $20 million to the taxpayer and, incidentally, a contract which underran the initial proposal, for an additional saving of $6 million. I am also proud of our association with our joint venture partners, as we all have pride in the quality of our workmanship. On behalf of the joint venture, I wish to thank you for giving me the opportunity to present a few comments in this matter.

I had one other statement, which is a personal thing regarding what I heard this morning. When I came down from school in 1954 and my friends learned that I was going to work for a constructor, they said, "You are prostituting your education." Now, 31 years later, I find myself thinking that when I grow up I would like to do something to help public construction achieve these difficult underground projects in time, within money. And I admire the fact that somebody is taking the bull by the horns to do something. I work on some other national committees that do this, and I would commend to you a recommendation for involving these major projects with a disputes review board. Our biggest misery and trouble is not getting decisions done in the course of the contract. We wait and it is very, very difficult to do.

The tunnels in the State of Washington that have been done, the Mount Baker Ridge Tunnel and some of their massive sewer projects, are completed. The State of Washington is happy with it and the contractor is happy with it. It can be done. You need decisions while the contract is going on, not 5 years after it is finished and you are not paid.

Thank you.

Mr. GEISER. Tom Bock was the project engineer. I needed as much professional backup as I could have. If you have any other questions, Senator, or your committee does, which you would care to submit to us in writing, or over the telephone, they will be answered promptly upon request.

Senator D'AMATO. Yes, of course, we will submit a number of questions in writing to you. You mentioned engineering specifications, designs, and change orders. I would like you to comment, with respect to this project, on the kinds of problems you encountered during its construction. Did you get a lot of change orders? Did you run into situations where you had inadequate specifications in plans?

Mr. SAMUELS. The first contract, 5B, was $155 million and the change orders amount to an additional $5 million. Its final cost will be $160 million. The second project, which was $186 million, as we marked in here, underran in its estimated cost to $180 million.

Senator D'AMATO. When did you undertake that first project?

Mr. SAMUELS. That first project was started on St. Patrick's Day 1976.

Senator D'AMATO. It must have been a heck of an auspicious beginning.

Mr. SAMUELS. The ladies were out with their baby carriages around the trees, because they wouldn't let the sidewalk trees be cut down to start the project.

Senator D'Amato. We should have listened to them. For that kind of money just think what could have been done. Revitalization of neighborhoods, and really using those dollars to their maximum potential.

Did you ever have any doubts about this project during its construction?

Mr. Samuels. Doubts with regard to what, sir?

Senator D'Amato. The need for the project. What the eventual outcome would be?

Mr. Samuels. What the eventual outcome would be?

Senator D'Amato. Yes.

Mr. Samuels. No, because our information was as a result of what we saw in the newspapers. It is very easy when you are involved in this project and you are down in that tunnel everyday to be fascinated; to be 130 feet underground in New York City, in one of the nicest neighborhoods in Manhattan, and see rock arches that are 70, 80 feet high, it is a thing of beauty, even though you saw it in a wet, bedraggled state when the tunnel was finished. It was a tremendous engineering challenge, the complexity of which probably is not understood by more than 100 people.

Senator D'Amato. Well, let us look at that 1978 bid. You bid for section 5A, is it?

Mr. Samuels. No, the dates are we bid 5A in October 1975. We started the job on St. Patty's Day 1976. 5B was bid in the summer, August 1978, and we started in October 1978.

Senator D'Amato. Let us go to section 5A of the tunnel. We started this in 1975 and the bid was $155 million. It strikes this Senator as odd that the MTA could put out one section of a tunnel for bid at $155 million when, in 1968, they estimated the cost of the entire tunnel to be under $155 million?

Mr. Samuels. I honestly don't know. I was not aware of the total budget for the project.

Senator D'Amato. That was the original estimate. It is just one of the things about this project that is shocking. We have some additional questions to ask the transit people because in February 1981, George Zeigler, chief engineer, was asking for information, discussing so-called new routes in a memo that questions whether the project be continued or "should we cork it up now." Now here we are 3 years later and no one is around. The people who were there are gone. The people in control cannot find the memo. We will get the memo and find out what happened, and whether the MTA Board ever met on that issue.

Of course, that is not your concern, but it strikes this Senator as something rather shocking. You know, here the entire project starts in 1968 at $154 million, and then you reach 1976 and one section is $155 million. Then at the end of it, which does not concern you gentlemen, we come to a point where they say, "We do not know whether or not we will ever be able to use it, and if we do use it, we may only carry a couple of hundred people a day."

Mr. GEISER. If I may, Senator, this project, without being used, will have cost every man, woman, and child in the United States, women and children, Alaska, Hawaii, and everyplace, $3 apiece. Now, whether that is a good idea, I don't know.

Senator D'AMATO. Well, if you include some ducks, turkeys, and pigs as well, you can bring it down to $2 apiece. That is why you have people in Washington who have grave doubts as to the propriety of Washington making transit construction moneys available and saying, "Do you think this money is pennies from heaven?" I can tell you that day is over. I do not know if the folks around here realize it. I wonder.

Let us talk about the cut beam.

Mr. GEISER. We are at a disadvantage.

It is not a matter that we didn't cut it, we did not know that it was coming up today, Senator.

Senator D'AMATO. You did not know that the cut beam was coming up?

Mr. GEISER. No, in fairness.

Senator D'AMATO. OK, Annie tells me that is true.

Mr. GEISER. However, we will be happy to answer any questions and in great detail.

May I just say this, Senator?

Senator D'AMATO. OK.

Mr. GEISER. When the beam in question was found to be, in fact, too low, it means too low in terms of, could the trains go under it, correct? You had to do whatever you had to do——

Senator D'AMATO. That alone had to be one of the great engineering feats. I do not blame you for that.

Look, you have got this beam which is too low, and someone says, "My God, the trains can't get under it."

Mr. GEISER. Well, they could have gotten smaller trains, I suppose. The fact of the matter is I think it is——

Senator D'AMATO. We probably would have done better if we had had you in that tunnel.

Mr. GEISER. There are too many lawyers.

Senator D'AMATO. Too many lawyers?

Mr. GEISER. That is right. The world is full of them.

But what happened in point of fact was that the TA, recognizing this problem, their engineering department generated a detailed set of plans and instructions.

Senator D'AMATO. They generated this?

Mr. GEISER. Oh, yes. They developed the redesign.

Senator D'AMATO. Let me ask you for the record, then, if you would submit to us all of the details, and any narrative that you would like to accompany it, with respect to the modification of that beam. How did it come about; why the modification, in the first place? I have some ideas. Your explanation will be appreciated because the beam question is not over. I find on CTL's report that there is a master engineer—I did not know Dartmouth had engineers.

Mr. SAMUELS. That is the trouble, they don't know about a good engineering school.

Mr. GEISER. It will be a pleasure to do so. May I ask Ruben Samuels whether you have anything to say on the subject today?

We will submit everything.

Mr. SAMUELS. One thing which is parallel, especially to the testimony of the metallurgist, it is quite common to have this problem in large building construction because the mechanical piping sometimes has to go through where a steel beam is and the problem of the design is an undergraduate engineering problem, it can be done. It is not any great unique thing that has been done here. The circumstances that surround it are not very pleasant, but it is not an uncommon problem; it is not an uncommon solution that you see in there.

Senator D'AMATO. I am not going to repeat the same things that I mentioned to Mr. Ascher. However, when the consultant said he did not consider the verification of the reinforcing, was not aware of any physical connection between current beam and G–4; had not been furnished information relating to the kind of welds used, it raises doubts about his conclusion that the beam is safe.

Mr. SAMUELS. Can I just comment in an unofficial way on what I have heard here today? The idea that a partial penetration weld is less desirable than full penetration. Both of these are engineering terms, and a partial penetration weld is a standard weld. The reinforced concrete bars that are referred to there are part of a reinforced concrete beam up over the beam which duplicate the action of that beam. So that instead of having the one beam which interferes with the clearance of the subway, you now have the beam that has been coped and strengthened, in my opinion, well, supplemented by a reinforced concrete beam above it. So that you have two beams performing the same function.

Senator D'AMATO. But that is if they are connected.

Mr. SAMUELS. No; they independently act. A reinforced concrete beam will act in the wall, in the concrete wall above it. There are basically two beams framing that and your thought of testing was done. Those welds were magnafluxed, which is a determination of the quality of the weld.

Senator D'AMATO. They should have had you make the report.

Mr. SAMUELS. We are not ashamed of what we have done. Tom is a professional engineer and so am I.

Senator D'AMATO. Let me say this for the record then. I would very much appreciate any additional information on the circumstances surrounding the alteration of the beam, what went into it, and any other information so that we can then get a clearer picture.

I do not know whether this beam is safe, and I do not think CTL knows.

Mr. GEISER. It will be a pleasure to submit that. Thank you, Senator.

Senator D'AMATO. That is why you have counsel. He figured it was about time to stop you.

With respect to the documentation of the concrete receipts and the concrete placement at the Archer Avenue subway project, can you explain what procedures your company uses to document the receipt and placement of concrete?

Mr. SAMUELS. We will have to get that from Schiavone themselves. But I can answer it partially.

Senator D'AMATO. Do you have receipts?

Mr. GEISER. Yes. We have 100 percent of our records. They are and continuously have been available for inspection by anybody who is interested. And, Senator, you are the first one who has demonstrated any interest. They are available.

Senator D'AMATO. What I will do is ask counsel or ask the regional director of UMTA to ascertain who should review that, whether it is UMTA or whether it is the TA.

The TA has never called you and asked, "Do you have any receipts?"

Mr. GEISER. No, sir; but we will be happy to cooperate with UMTA.

Senator D'AMATO. I understand that. Why should it be any different? They waited 2 months until I came out of the tunnel to go down there and acknowledge the problems.

Is it normal under contracts that you work on not to have inspectors present on site to sign delivery tickets or to have somebody there to supervise the process?

Mr. SAMUELS. Well, the inspectors have to be there during the course of the pour. Some of these pours on these jobs were massive in that 4 or 500 yards, and there might be 30 or 40 trucks coming during a 5- or 6-hour day. The truck might come and go and the ticket might not be signed, but the control is automatic. When you are pouring concrete in a tunnel, there is only place for it to go, against the rock, in the form. It is not a matter of there being concrete missing or the tunnel being inadequate.

Senator D'AMATO. Well, there surely seems to be a question here. I cannot raise this with respect to any of the contractors, but the inadequacy of the TA inspections is repeatedly demonstrated. Their own internal memoranda indicate that they were concerned with overtime costs and, consequently, they did not make concrete inspections that they should have made. They were not there to do certain tests, et cetera, at the batch plants, and they were not always where they should have been. That is according to the Department of Transportation's inspector general. I cannot lay that at your doorstep. I will ask somebody from the TA to verify the receipts with respect to the 80,000 cubic yards of concrete.

We will submit a number of other written questions. I will ask you to respond within 2 weeks. We thank you for your participation today and for your candor.

Mr. GEISER. Thank you.

Mr. SAMUELS. Thank you.

[The statement follows:]

STATEMENT OF REUBEN SAMUELS

I am Reuben Samuels, the vice-chairman of Thomas Crimmins Contracting Co., one of the three contractors comprising the Joint Venture that constructed Sections 5A and 5B of the East 63rd Street subway. Please bear in mind that we only constructed two out of the seven major civil contracts and that the seven sections were constructed by various joint ventures involving more than eleven contracting organizations. My comments in response to your letter, are, of course, limited to the 5A and 5B sections.

We have had, and continue to have, problems with the Transit Authority in regard to the management and administration of the contracts we have performed on the 63rd Street Tunnel, and elsewhere. We feel, however, that these problems are common, in varying degrees, in dealing with large public agencies. We understand the purpose of this hearing is twofold: (1) the justification for the construction of the tunnel, and (2) the quality of the work performed in building it.

On the first point we have nothing to say as it is not for us to participate in that part of the discussion.

On the second point we are confident in the knowledge of having carried out this extremely complex work in full compliance with our contract obligations. The publication, during the last few days, of the conclusions reached by an independent consulting engineer engaged by UMTA and/or the T.A., supports our position. The completion of these studies will vindicate us more credibly than we could do by engaging in a limited technical discussion on this occasion.

There are several issues, however, upon which we feel we should comment. One is that there has been a basic difficulty with the Transit Authority trying to shift to the Contractor the burden of the ultimate success of the Owner's design, rather than limiting the Contractor's responsibility to the performance of his contract. This can be illustrated by the issue regarding the adequacy of the waterproofing. The contract documents contain a detailed specification for an elastomeric waterproofing compound and the method of application. As required by the specifications, the materials and the workmanship were verified for contract compliance by the Transit Authority. In all areas where they found the waterproofing installed by our subcontractor did not meet the minimum thickness as initially applied, "additional elastomer compound" was installed "as directed by the Engineer" and "at no additional expense to the Authority". We complied with these directives, thereby satisfying the full extent of our contract obligations. It must be noted that the satisfaction of the minimum thickness requirement could not be assured by the over-application of the material since the specifications also contain a maximum thickness which was only 50 thousandths of an inch greater than the minimum permissible thickness. It should also be noted that there is a history of the specified waterproofing not being able to produce a water-tight project, let alone a "perfect" one.

It appears that a few pieces of correspondence related to our Contracts, 5A and 5B, have been selected for presentation to this Committee. We are concerned that if these are taken out of the proper context, which can only be understood by reviewing the many other documents on the same subject, wrong impressions and judgments will almost inevitably result.

With regard to your request for comments on the Transit Authority's quality control, the issue of the level of quality control performed by an Owner is not a subject matter that is within the province of a construction contractor working under the type of specification used by the Transit Authority. The recent reports by Construction Technology Laboratory indicate that the concrete and other materials were found to be of "high quality". It would therefore appear that the program used by the Transit Authority produced a satisfactory result. Whether or not a more detailed quality control program was justified is a matter beyond the scope of a construction contractor.

Although I was not involved in the construction of Section 7 of the Archer Avenue project, I have been provided with Schiavone's information regarding the so-called undocumented, or missing, concrete. (Item #3 of your letter.) Schiavone has delivery receipts and have paid their supplier for more than 82,000 cubic yards of concrete which is 10,000 cubic yards more than the quantity approved for payment by the Transit Authority. What happened to the Transit Authority's delivery receipts and inspection reports, the Contractor does not know. Keep in mind that payment to Schiavone was only made for concrete measured in place in accordance with the plans and specifications and payment was not based upon delivery receipts.

I am proud to have played a role in these two complex projects and in the pioneering use of a Tunnel Boring Machine for subway construction in Manhattan at a saving of more than 20 million dollars to the taxpayer and, incidentally, a contract which underran the initial proposal for an additional saving of 6 million dollars. I am also proud of our association with our Joint Venture partners as we all have pride in the quality of our workmanship. On behalf of the Joint Venture I wish to thank you for giving me the opportunity to present a few comments in this matter.

COMMITTEE FOR BETTER TRANSIT

STATEMENT OF RALPH BRASKETT

Senator D'AMATO. Our last panel is the Committee for Better Transit. Mr. Ralph Braskett?

Mr. BRASKETT. Thank you for inviting me to testify, Senator. The critical question is, How do we make the 63d Street tunnel usable?

We have invested 1983–84 dollars, $1 billion, in the tunnel and the Manhattan connections to both the Sixth Avenue and the Broadway subways.

The Committee for Better Transit firmly believes, and I will summarize their testimony, that the Queens straphangers need immediate help. Immediate in Transit Authority terms probably means 3 years. We believe the work that needs to be done—and we think it is minor, but we may be wrong based on what we heard here today—we believe that the minor repairs that are necessary to bring the tunnel up to operating standards should be done, and most critically that the tracks and tunnel be extended to Queensborough Plaza Station in modest extension, a fairly complicated but already doable station be built underneath the Queens Plaza Station and a transfer made to the existing Queens service.

We would also support the running of more local trains on those local tracks from Queens Plaza to 179th Street, with a transfer by escalator, to service put into the Queens Plaza Station. This is a doable project. We estimate this for an additional 10 to 20 percent expenditure for both construction and cars. Something can be done for Queens subway riders before the year 2000. Everything else we have heard over the past, whether it is the local connection or even fancier schemes, we are talking about the year 2000 before Queens subway riders see any relief. This is for a tunnel that was planned in the 1960's.

I can either go on with some details or an interim solution, or I can stand open for questions. In the long term, we are absolutely convinced that the Long Island Railroad tracks, which are just outside the Queens Plaza Station, must be used to provide further subway service in Queens. In this day and age of tight budgets and a lack of funds, as you have already indicated earlier, we cannot squander existing tracks, nor can we squander a tunnel that comes within an eighth of a mile of providing relief for Queens straphangers.

Senator D'AMATO. You heard Congressman Green and his assessment of the cost of the extension that you mentioned. The MTA's projection is roughly $250 million. It seems to me that we are talking about a very expensive project. Given Congressman Green's assessment of the economics, the question is raised when it is said, "Well, we made this terrible costly mistake, and now we are going to try and make it better by investing another quarter of a billion dollars." This issue must be addressed.

I am not unmindful of commuters, understand that. If you live in Nassau County, you cannot be unmindful of commuters.

Mr. BRASKETT. Long Island Railroad is improving.

Senator D'AMATO. Well, it is not just the Long Island Railroad.

Mr. BRASKETT. I am aware of that.

Senator D'AMATO. So that is a concern to me.

Mr. BRASKETT. It should be. The point is the $250 million figure we hear is for a transit abortion called the local connection. We are violently opposed to the local connection because for $250 million you get half the service, if you are lucky, that the 63d Street tunnel is capable of providing. You do virtually nothing for the Queens straphangers, especially those people who live farther out in eastern Queens, and those people taking buses into Jamaica, and you cut off service from Brooklyn to Queens by truncating the GG and in the process leading to the eventual abandonment of the GG. So the local connection is something we have fought.

We believe that for something on the order of $100 to $125 million, that is 10 to 20 percent over the current cost number for the tunnel, that we can provide transfer service at Queens Plaza.

Senator D'AMATO. Well, let me suggest that you submit some kind of written program, or plan encompassing your suggestion to this committee. We will submit it to the Transit Authority, the MTA, and to UMTA for their evaluation. Let us get a thorough evaluation of it for you.

Mr. BRASKETT. Fine.

Senator D'AMATO. I am simply not in a position to comment on the merits of your plan, but certainly let us take a look at it.

Mr. BRASKETT. That is fine. Then it will good to get some different cost estimates because each agency will probably give you different cost numbers.

Senator D'AMATO. Very good. Thank you very much. Why don't you submit that to us. Ms. Miano will give you the mailing address so that you can send it to her attention.

Senator D'AMATO. Frank McArdle?

[No response.]

GENERAL CONTRACTORS ASSOCIATION OF NEW YORK, INC.

STATEMENT OF FRANCIS X. McARDLE, GENERAL MANAGER

Senator D'AMATO. Our next witness is Mr. Frank McArdle, general manager of the General Contractors Association.

Mr. McARDLE. My name is Frank McArdle. I am the general manager of the General Contractors Association. The 63d Street tunnel route was built in whole by members of our association in joint venture, one with another.

I have prepared a statement for you detailing some of the lessons that I think can be learned from the 63d Street tunnel experience. I would like to summarize that for you very quickly.

I think there are really three points that come out of this: The first is—and it is one that was alluded to earlier this morning by Chairman

Kiley—is that the Transit Authority has to improve its handover procedures. A contractor can build the best thing in the world, but if there is no one there to take it over and maintain it before or after it is put in service, it is going to deteriorate and it is going to have to be reworked very quickly.

Capital money has always been considered in the public sector as sort of a free good. It is easy to get your hands on. Operating money has always been scarce and we have run into consistently in public work, particularly in the last couple of decades, the problem of building it and then not maintaining it.

The second point I would make is that—and it is a major problem with the Transit Authority, one that affects all of our members—is that change-order procedures delay contractors from doing work, delay the progress of the job, push costs up much higher than they have to be. You do not get quick change-order decisions. You are delayed on the job. You have to insure that in the bid up front.

There is no question that contractors do not like doing work for the Transit Authority or many public sector agencies when there is work available of a similar kind from the private sector, because the private sector pays quickly, the public sector does not.

The third lesson, and perhaps the one that is most important for the future, is that ultimately the engineering organizations of the Transit Authority or any other public organization, are the people who are there. And if the Transit Authority does not now focus not only on its top leadership but on the bottom, we are going to have repeat experiences with what has gone on at the Transit Authority and elsewhere. There are 280 jobs now open at the Transit Authority incompleted. They are open, in whole or in part, because there weren't enough people on the Transit Authority's side to see that they were completed and punched out.

It is as simple as that. Three lessons that that project has taught us all that have to be memorialized in whatever steps forward. Contractors cannot work for the Transit Authority at their lowest prices and their highest efficiencies otherwise.

Senator D'AMATO. Would you submit to this committee a detailed analysis of what you believe not only the TA, but similar agencies, should undertake in order to minimize cost overruns, delays, and to bring about a more efficient flow of projects and implementation of contracts.

Do you have any suggestions? I imagine you would.

Mr. MCARDLE. We have many. One that would, in fact, be easiest for you as a U.S. Senator to implement would be in concert with your colleagues to require that any public funds that are used from the Federal level of Government be subject to the same kind of disputes resolution mechanisms that you, yourself, find acceptable when you do direct Federal contracting. It is absurd to have the Federal Government having very effective disputes resolution mechanism for its direct contracting and be subject to all the local vagueries when, in fact, the Federal funds pass through other hands.

Senator D'AMATO. Are you saying that disputes would be resolved more quickly if we knew who is responsible for maintenance, and when a project is ready to be taken over or not.

Mr. MCARDLE. Exactly. And would settle claims in a much faster, much more equitable way than we find is done locally. And if it is good for direct contracting, it really ought to be good for all the grant agencies that you give your money to, particularly when you are 85 or 90 percent of the money.

Senator D'AMATO. It seems to me that this may be an appropriate question for the Public Works Committee to review if they have not already done so. It obviously has far greater policy implications than simply one project, but it is fair and reasonable for us to review that. I will ask that this committee pass this information on to the committee of jurisdiction.

If you have any additional suggestions as to how to improve construction management, which would accrue to everyone's benefit, we would be interested.

Mr. MCARDLE. We would be more than happy to supply that to you.

Senator D'AMATO. Very good.

[The statement follows:]

STATEMENT OF FRANCIS X. MCARDLE

It is my pleasure to speak before you today on behalf of The General Contractors Association, The New York City trade association for the heavy construction industry. The Association represents its 108 active members in collective bargaining with fourteen construction trade union locals and in relations with the public owners who are major clients. Our members perform heavy construction work - we build subways, tunnels, roads, sewage treatment plants, and sewers. Ninety five percent of our work is done for the public sectors. Our contractor members built the 63rd Street tunnel.

Our relations with the Transit Authority and its predecessors go back to the founding of the Association in 1909. We have had, and expect to continue, an on-going dialogue with the engineering staff of the Authority to better inform the two parties and to work through problems that crop up. We have worked extensively to propose revisions to TA specifications where we believe that improvements can be made to get the highest quality work performed in the best amount of time and at the lowest possible cost. We wish the new engineering management well in their efforts to continue the necessary internal reorganization and improvement process.

The saga of the 63rd Street tunnel reveals many of the dilemmas and problems that confront contractors who undertake work for the Transit Authority. The findings of the Construction Technologies Laboratory were absolute. The tunnel is soundly constructed. The concrete installed is of high quality, with installed compressive strength almost twice that required by the contract specifications. The minor water inflow is only nine percent of the volume expected and used to calculate pumping capacity. Does that mean everything went well? No. The report highlights in 63rd Street the problem that most plagues contractors who deal with the Transit Authority, the handover problem. Our contractors work under the direction of the engineering department, but the work is being done for the operations group. If there is not a smooth handover, the work we do for the engineering group never gets properly maintained until it's put into service. This clearly happened on 63rd Street.

The interface with the operating groups and the engineering group constantly frustrate contractors. Our members will often build what the engineering department wants and accepts, to find that the operating groups won't accept it. This means that the contractor is delayed getting off the job and getting paid, even though he or she have satisfied the people for whom we work, the engineering group. We suspect that some of the reasons that these delays occur is because the up-front dialogue at the design stage is so flawed that the operating people only know or understand what the designs will produce after they see it built. But we also suspect that some of the delays occur because the operating groups aren't ready, or have the people, to operate and maintain things.

The problems with handover and operating group acceptances account for most of the delays in closing out construction projects. Fully half of the 280 projects in the TA's new close-out program appear to be held up in whole or in part for this reason.

The interface problems contribute to a second major problem that contractors have with the Transit Authority, that of change orders. Contractors have been historically frustrated by the change order procedures of the Transit Authority. Until recently all change orders, for $5 or $500,000, required the approval of the Chief Engineer. And no work is to be done, in most cases, unless the change order has been issued. The need to have the change order in place before the work can proceed is a fine concept, if there is expedited decision making and paper work processing. Unfortunately, the experience to date at the Transit Authority has been one of delays in decision making and paper work. Jobs stop or slow down as ponderous reviews are undertaken. The new procedures being adopted by the Authority are a welcome step forward only if the decisions are expedited by the level of authority that can make the decision. It is little comfort to know that an Assistant Project Manager can make the decision if it still takes six months for the decision to be made.

The Transit Authority has proposed substantial changes in the processes that its engineering group will use in the future. It is hoped by all the members of The General Contractors Association that do work for the Transit Authority that it will be successful in carrying through the changes that have been proposed. But ultimately, the success of those changes will be a function of the personnel that the Transit Authority is able to attract and retain. In this regard, the Transit Authority is held hostage to the same forces that affect all the other public owners in the New York City area. There were few, if any, domestic engineering graduates recruited by the New York City public owners in the decades of the sixties and the seventies. The absence of that intake has led to substantial weaknesses in the middle management structure of most of the local public agencies. Those deficiencies were compounded by the inability of the local public agencies to retain the brightest and best of what they recruited. There has been little attention paid in the past decade to the implications of this for the capital programs of the New York City area. The Transit Authority is now making a substantial effort to recruit top management for its engineering program. The contractors welcome that influx. But that influx cannot be the sole answer to the personnel problems at the Authority. It must substanially increase its recruiting efforts at the bottom at the entry point, and it must accelerate the training and retraining of those first and second level engineering supervisors who are responsible for the day to day conduct of the work undertaken by our members. Our members are too often confronted with too few engineering people chasing too many questions and too little time. The Transit Authority must, in this period in which it is trying to overcome the problems of the past that have led to such a substantial open contract backlog, as well as to accelerate its capital investment program, over recruit and add more staff than might be reasonably contemplated to be needed in a "normal" environment. And it must not only provide the engineering personnel in surplus numbers, but it also must provide the support staff that are needed to expedite program close-out as well as new program implementation. It is essential that the clerical, administrative and records management staff be available to ensure that engineering personnel don't waste their time on non-engineering functions. Too often these back office personnel needs are neglected to the detriment of all.

Thank you very much for your patience. I will be happy to answer any questions.

Senator D'AMATO. We are going to keep the hearing record open for the next 2 weeks so that those who have testified and others who might have pertinent information can submit it in writing to this committee.

I want to thank our committee clerk, Pat McCann, for his excellent job in helping us to hold this hearing. It was a major undertaking. I am greatly appreciative of the support given by Senator Andrews, the subcommittee chairman. I also thank Senator Hatfield, chairman of the full committee, as well as Anne Miano, my legislative assistant, who on a day-to-day basis has been working hard to bring this hearing about. All of those who have been so cooperative in making known their views and giving us their testimony are also appreciated for their valuable contributions to this process.

Hopefully, we will soon have a legislative initiative that will help to minimize some of these problems in the future. I do not in the slightest think that all of the problems will be solved right away because there are many different, complex issues to address. For example, the suggestion made by Mr. McArdle with respect to a method of settling disputes might go a long way toward resolving some of the problems that we have on these major projects.

Finally, we are also deeply appreciative of the efforts of our court stenographer, who has been yeoman-like. He only took one little break. We thank him.

[Chronological listing follows:]

CHRONOLOGICAL LISTING OF SIGNIFICANT NEW ROUTES DOCUMENTS FOR PERIOD JANUARY 14, 1965 TO AUGUST 27, 1985

January 14, 1965	NYCTA Statement on the 63rd Street Tunnel to the Board of Estimate.
January 14, 1965	Board of Estimate resolution approving the Route & General Plans for the 63rd Street Tunnel.
January 28, 1965	J. O'Grady to Corps of Engineers requesting Permit for the 63rd Street Tunnels.
April 5, 1965	Preliminary Application by the City for Federal Funds ($23.5M) for construction of the 63rd Street Tunnel.
April 9, 1965	O'Grady to State Office of General Services seeking easements under East River.
April 26, 1965	Housing and Home Finance Agency to TA re: request for Federal funds. Approval of federal funds is unlikely because of the absence of firm plans for tunnel connections.
April 27, 1965	Scannel to Civil Service Commission asking for permission to hire on a temporary basis the top and middle level supervisors for supervision of construction of the 63rd Street Tunnel.
May 25, 1965	Adoption of contract documents for the 63rd Street Tunnel. Start of advertising - June 15, 1965
June 16, 1965	Bill to authorize the construction of the 63rd Street Tunnel is passed in Assembly.
June 21, 1965	City Office of the Budget to Parks Department re: ventilation shaft at 41st Street, Queens.
June 24, 1965	O'Grady to Harry Van Arsdale seeking support for Bill to construct 63rd Street Tunnel.
June 25, 1965	N.Y. Times editorial asking Governor to veto the Bill authorizing the construction of the 63rd Street Tunnel.
July 7, 1965	Summons, 63rd Street Tenants Association against the City to enjoin construction of the 63rd Street Tunnel.
July 15, 1965	Scannel to Brodkin recommending postponing bid opening until August 3, 1965.
July 16, 1965	TA resolution postponing bid opening for the 63rd Street Tunnel from July 23, 1965 to August 3, 1965.
July 21, 1965	Approval by Rockefeller of Bill authorizing the TA to construct a tunnel at 63rd Street.
August 2, 1965	Citizens Budget Commission's press release urging the Transit Authority to postpone the opening of bids for construction of the 63rd Street Tunnel.
August 3, 1965	Citizens Budget Commission's press release protesting the opening of bids for construction of the 63rd Street Tunnel.
August 3, 1965	A single bid ($56.4M) received for the 63rd Street Tunnel (Engineer's Estimate - $27.5M).

August 24, 1965	TA's press release rejecting the single bid and appointing a panel of consulting engineers to study cost and various methods to construct the tunnel.
August 27, 1965	NYCTA to Mayor Wagner to approve the retention of Consultants (PBQ&D, Gibbs & Hill, Sverdrup & Parcel) to review designs and cost estimates of East River tunnels at 61st and 63rd Streets.
September 13, 1965	Citizens Budget Commission's press release opposing the 63rd Street Tunnel. (They favor a tunnel at 61st Street)
September 29, 1965	Mayor's approval of contract for Consultants (Associated Consulting Engineers) to study design and cost of East River tunnels.
December 30, 1965	Report of Associated Consulting Engineers to TA recommending tunnel at 63rd Street rather than 61st Street.
January, 1966	Report by the Citizens Budget Commission on the advantages of the 61st Street Tunnel.
January 28, 1966	O'Grady to Palmer, Transportation Administration answering his questions and stating that TA will proceed with design of a trench type tunnel at 63rd Street.
February 8, 1966	NYCTA draft report of 63rd Street location.
February 17, 1966	Brandes to Corporation Counsel concerning the possibility of adopting "wrap-up" insurance for New Routes construction.
February 21, 1966	NYCTA to PBQ&D, Sverdrup & Parcel and Gibbs & Hill notifying them that they will be retained as designers for the trench-type tunnel.
March 8, 1966	Mayor Lindsay's press release announcing that he will ask the TA to begin work on the 63rd Street tunnel as promptly as possible.
March 8, 1966	TA to Associated Consultants advising them of TA's desire to secure their services as consultants for preparation of contract drawings for a trench-type tunnel.
April 26, 1966	MCTA's press release stating that the projected 63rd Tunnel will be enlarged from two to three tracks to carry both TA and LIRR trains.
June 2, 1966	MCTA Counsel Prince to TA asking that an agreement be prepared for a four-track 63rd Street Tunnel.
June 7, 1966	Brandes to Corporation Counsel seeking local consent for construction of a four-track tunnel.
June 15, 1966	Prince to Brandes relating to occupancy of City Streets by MCTA subway structures.
July 22, 1966	Chief Engineer to General Manager recommending that General Counsel prepare an agreement with the Associated Consulting Engineers for $420,000.
December 23, 1966	Agenda for 63rd Street Tunnel which includes timetable for the tunnel construction.

December 27, 1966	TA to City requesting $10M to initiate the 63rd Street Tunnel project.
January 5, 1967	Agreement between TA and Associated Consulting Engineers to design underwater portions of the tunnel.
February 10, 1967	Lassow, Assistant to the Chairman, to the TA, transmitting a draft contract between TA and Coverdale & Colpitts to study connections to the 63rd Street Tunnel ($250,000). The Consultant had been already working on this study for over two months.
March 21, 1967	TA to the Mayor and the Board of Estimate requesting approval of the Coverdale & Colpitts contract.
May 8, 1967	Maevis to File on the distribution of costs between NYCTA & MCTA (TA-49.2%; MCTA-50.8%)
June 19, 1967	Tunnel Workers Union to Scannel requesting a meeting to discuss TA plans for the tunnel.
June 22, 1967	Brandes to TA Concerning City's delay in approving contract with the Associated Consulting Engineers for design of a trench tunnel.
June 26, 1967	Corps of Engineers to TA directing compliance with federal regulations for work in navigable waters.
July 21, 1967	Maevis to Schlager recommending payment of $40,000 to the Associated consultanting Engineers out of the Operating Funds for Preliminary Report completed July 19, 1967.
July 31, 1967	TA resolution approving the payment of $40,000 from Operating Funds to the Associated Consulting Engineers.
November, 1967	$2.5 Billion Transportation Bond Issue approved for transportation improvements throughout the State. $600M allocated for the New Routes Program in New York City.
January 25, 1968	Coverdale & Colpitts' report "Recommendation for Rapid Transit Connections to the 63rd Street Tunnel in Manhattan and Queens and for location of an East Side Manhattan Rapid Transit Line with connections to the Bronx."
February, 1968	Metropolitan Commuter Transportation Authority presented to Gov. Rockefeller a transportation plan - "A Program for Action."
February 29, 1968	NYCTA to Mayor Lindsay forwarding for approval an agreement with the Associated Consulting Engineers for design of 63rd Street Tunnel by trench method ($420,000).
March 1, 1968	MTA assumed jurisdiction over the Transit Authority.
March 29, 1968	Application for Corps of Engineers' approval of permits to construct underwater tunnels.
May 8, 1968	Memo from A. C. Maevis to D.T. Scannell submitting to the TA Route and General Plans for 8 Routes (131-A, 131-B, 131-C, 131-D, 132-A, 132-B, 29-B, 31-A)
May 10, 1968	Route and General Plans for the 8 Routes were submitted to the Board of Estimate.

Construction Cost - $787M
Equipment Cost - $170M

TOTAL $957M

July 29, 1968	A table showing a breakdown of $957M by the individual routes.
July 31, 1968	Letter from W. J. Ronan to the Board of Estimate revising costs for construction and equipment (total remains the same) Construction Cost - $717M Equipment Cost - $240M TOTAL $957M
August 1, 1968	Minutes of the City Planning Commission's Hearing on July 31, 1968 on the proposed New Routes.
August 14, 1968	"Standards for Rapid Transit Expansion," a report to the Mayor and the Board of Estimate prepared by Transportation Administration, City Planning Commission and Bureau of the Budget.
August 16, 1968	Resolution extending the time for a vote by the Board of Estimate on approval of the 8 Routes to September 20, 1968.
August 21, 1968	Minutes of a meeting with Chairman Ronan on Engineering Organization and Standards for New Lines.
September 5, 1968	Minutes of a meeting with Chairman Ronan on August 28, 1968 to discuss New Routes. (New lines to be designed for 80mph operation; stations to be designed by eminent architects).
September 10, 1968	Application for easements for land under water from State of New York.
September 12, 1968	Memo from Executive Officer - Operations and Maintenance to his Department Heads establishing a group for developing standards for New Lines.
September 16, 1968	Minutes of a Staff Meeting on September 13, 1968 to discuss how to implement the New Routes Program. Phase I - A study to determine methods of construction and cost (3 months). Phase II - Design to the extent necessary to determine accurate costs. Phase III - Final design and specifications Phase IV - Construction
September 20, 1968	Board of Estimate approved 6 Routes (131-A, 131-B, 131-C, 131-D, 132-A and 132-B), disapproved 2 routes (29B and 31A) and added 6 additional routes: Midtown Manhattan - along 48th Street Extension of 2nd Ave. Line to Battery Extension of Nostrand Ave Line to Avenue W 14th Street - Canarsie Extension Utica Avenue Route Replacement of the Third Ave El (Bronx)

October 9, 1968	Memo from B. Adler, Division Engineer to A. Maevis, Chief Engineer stating that the costs of New Routes which were submitted to the Board of Estimate did not include allowances for storage and repair shops.
October 10, 1968	Transcript of Board of Estimate discussion of New Routes.
October 11, 1968	Chairman Ronan to Mayor Lindsay requesting an agreement to construct a Long Island Rail Road Route (Manhattan Terminus - 42nd Street & 3rd Avenue).
October 11, 1968	Agreement between N.Y. State and MTA for funding of the State's share of the 63rd Street Tunnel ($37.5M).
October 14, 1968	Chairman Ronan to Deputy Mayor Sweet submitting a request for approval of two LIRR routes: East Side of Midtown Manhattan and Rail Access to Kennedy Airport.
January 17, 1969	Corps of Engineers to TA transmitting permit to construct 63rd Street Tunnel.
January 20, 1969	Agenda for discussions with Dr. Ronan on the New Routes.
January 23, 1969	Memo from G. Ziegler, Acting Division Engineer to B. Adler, Deputy Chief Engineer on the cost of New Routes. 6 Routes approved by the Board of Estimate - $809M Nostrand & Utica - $221M Additional Routes - $392M $1,422M
February 7, 1969	Martino to Maevis describing the 63rd St. East River Tunnel.
February 23, 1969	Sunday News article stating that the 63rd Street Tunnel will be advertised soon.
March 14, 1969	Routes & General Plans for the 3 additional routes were submitted to the Board of Estimate (132-C, 29-C, 57-B) Construction Cost - $280M Equipment Cost - $ 84M $364M
March 26, 1969	Memo from C. Kalkhof to H. McLaughlin on the Train control for New Lines. 1. New lines will be equipped for cab signal operation 2. Existing Queens lines will be equipped with a dual system 3. New cars are to be equipped with cab signal equipment.
April 11, 1969	The MTA Board approved two alternate forms of contracts ("Shield" and "trench") for the 63rd Street Tunnel and approved the start of advertising.
May 1, 1969	Final Report - Study of Waterproofing Systems and Techniques
May 8, 1969	New York Times article stating that a Public Hearing will be held on June 3, 1969 re: 63rd Street Tunnel.
May, 1969	Engineering New Record article giving a brief history of the 63rd Street Tunnel.

May 9, 1969	Coverdale & Colpitts presented to the MTA Board station locations for each route and alternatives to Route 132-C.
June 3, 1969	Board of Estimate approves 29-C and 57-B but holds in abeyance the approval of Route 132-C.
June 4, 1969	Memo from A. Maevis stating that the Board of Estimate on June 3, 1969 approved a contract between the MTA and the City for the construction of the LIRR route along 3rd Avenue.
June 6, 1969	Sidamon-Eristoff to Ronan notifying him that an application for funds from the State Transportation Bond Issue for the 63rd St. Line was forwarded to the NYS DOT (Total cost- $154M; State Share - $101M).
June 12, 1969	Turin's memo giving a cost split between the TA and LIRR for the 63rd St. Tunnel. (Total cost -$73.3M TA-49.2%; LIRR 50.8%)
June 16, 1969	MTA's New Release re: start of advertising for the 63rd Street Tunnel.
July 24, 1969	Board of Estimate approves Route 132-C provided that it is shifted easterly in the lower East Side area.
August 8, 1969	Alternate alignments and methods of construction for the 63rd St. Route were presented to the MTA Board.
October 3, 1969	The MTA Board approves the award of the 63rd Street Tunnel to Peter Kiewit/Morrison Knudsen/Slattery Associates for $69,480,920.
October 30, 1969	Contract awarded to the Joint Venture
November 14, 1969	The MTA Board approves deep alignment scheme for the Utica Avenue Route.
December 12, 1969	Alternate Plans for Route 132-C and 103-B were presented to the MTA Board.
January 9, 1970	Routes and General Plans for 131-A (Mod.), 131-B (Mod), 133 submitted to the Board of Estimate. Routes 131-A and 131-B were modified to conform with the Board of Estimate's September 20, 1968 resolution that these two routes be interconnected in the Sunnyside Yard area. Route 133 was also submitted to comply with the Board of Estimate's September 20, 1968 resolution to provide a connection to the BMT Jamaica El in the vicinity of 127st Street which would permit demolition of the El structure.
January 16, 1970	NYCTA to Associated Consulting Engineers soliciting a proposal for construction management of the 63rd Street Tunnel.
January 30, 1970	Route and General Plans for Rt. 132-C and 103-B submitted to the Board of Estimate.
February 13, 1970	Minutes of a meeting of the "Sunnyside Yard Committee" on February 11, 1970. The purpose of the Committee was to determine the feasibility of constructing a joint TA-LIRR storage and shop facility in the Sunnyside Yard Area.
March 6, 1970	Maevis to Feldman (Executive Officer for Operations) on the locations of storage facilities for the New Routes.

March 19, 1970	NY Times article describing New Routes which will be on the March 19, 1970 Board of Estimate's Calendar.
March 19, 1970	Board of Estimate approves 5 Routes; 131-A (Mod.) 131-B (Mod), 133, 132-C and 103 B.
	With the approval of these routes, a total of 11 routes were approved by the Board of Estimate.
	Rt. 131-A - 63rd Street Line Rt. 131-B - Super Express Line Rt. 131-C - LI Expressway Line Rt. 131-D - Archer Avenue Line Rt. 132-A - Second Ave. Line (34th to 126th St.) Rt. 132-B - Second Ave. Line (126th to 180th St.) Rt. 132-C - Second Ave. Line (34th to Broad St.) Rt. 29-C - Nostrand Ave. Extension Rt. 57-B - Utica Ave. Line Rt. 133 - Jamaica "El" Connection Rt. 103-B - Avenue "C" Line
	Total length of the routes -- 40.0 miles
March 23, 1970	Ziegler's memo on a TA Board Meeting at which Board approved the "loop" alignment of Rt. 131-D which passes through the York College site.
April 15, 1970	Ronan to Scannell, Feldman and Schlager informing them that the TA's Engineering Department will be responsible for planning, designing and constructing a joint TA-LIRR Car Storage and shop facility at Sunnyside, Queens.
July 10, 1970	The MTA Board approves a recommendation to construct a station on Rt. 131-A in Queens at 21st Street.
July 30, 1970	NY Post article on the proposed legislation to bar "cut-and-cover" subway construction through Central Park.
September 4, 1970	O'Neill to Scannell commenting on the City's Consultant preliminary report dealing with the proposed subway construction in Central Park.
October 9, 1970	The MTA Board adopts a resolution authorizing the filing of an application for federal funds for 2/3 of the 1,195,000,000 estimated cost of the 11 approved routes.
October 14, 1970	Memo from G. Ziegler to J.T. O'Neill giving a comparison of costs for 11 routes (Rt. and General Plans costs vs. N.Y. State Legislature costs vs. N.Y. Times costs)
October 23, 1970	MTA's application to UMTA for federal funds to provide direct LIRR access to Mid-town Manhattan. (Total cost - 300M).
October 26, 1970	Ziegler's memo on a meeting with Chairman Ronan on October 23, 1970. Because Rt. 131-B is an one-track line, there will be the unbalanced flow of 30 trains/hour. Dr. Ronan wants the entire operations of the New Routes reviewed.
November 17, 1970	Minutes of meeting between TA and East 63rd Street Association.

December 24, 1970	O'Neill to Chase Manhattan Bank giving a schedule of completion dates for all routes.
December 29, 1970	Minutes of a presentation of the proposed services between Queens and Manhattan. A suggestion was made to construct a transfer station at 63rd St. and 2nd Avenue.
January 11, 1971	Minutes of a meeting with the Park Department on subway construction in Central Park. Park Department proposes alternate alignments to minimize the disturbance to the park.
January 22, 1971	New York Times article describing an alternate subway alignment in Central Park as proposed by the City's Consultant.
January 25, 1971	G. Ziegler's memorandum giving construction starts, duration, end of construction and start of operation
February 16, 1971	Memorandum from L. Horn to S. Valenza giving funding allocations for the New Routes and On-Going Programs during 1960-1970.
March 23, 1971	Ronan to Assemblyman Gold informing him that TA will comply with the City's request to change subway alignment in Central Park.
April 12, 1971	O'Neill to Scannel summarizing a presentation to Dr. Ronan on March 30, 1971 relating to the 2nd Avenue Line.
May 7, 1971	O'Neill to Brandes (General Counsel) indicating that a presentation was given to Dr. Ronan on April 30, 1971 at which a decision was made to modify Rts. 131-A and 131-B. Rt. 131-B will have two tracks and Rt. 131-A will be modified in Sunnyside Yard.
July 28, 1971	G. Ziegler to J.T. O'Neill explaining federal requirements for Public Hearings for the New Routes.
October 8, 1971	An agreement was executed with Associated Consulting Engineers (P,B,Q&D, Sverdrup & Parcel and Gibbs & Hill) for technical inspection of construction of the 63rd St. River tunnel.
November 1, 1971	Presentation to Dr. Ronan on Super Express routing.
November 3, 1971	MTA's News release relating to the rejection of the 1971 Transportation Bond Issue.
November 18, 1971	"Report on New Routes Program - Priority Analysis" prepared by the Engineering Department.
December 30, 1971	Ronan to Transportation Administrator Sidamon-Eristoff rejecting proposal to construct a station at 63rd Street and 2nd Avenue.
January 13, 1972	Ziegler to O'Neill giving proposed schedule and priority for construction of 63rd Street and Second Ave. Lines.
January 17, 1972	Request to the Board of Estimate to Remodify Rt. 131-A and Rt. 131-B. (a) 131-B to be constructed as a two-track line rather than one-track line. (b) Eliminate interchange between 131-A (Mod.), 131-B (Mod.) and Queens Blvd. Line at Northern Blvd. (c) Construct a direct connection between Route 131-A and 131-B (d) Change in the alignment in the Sunnyside area.

January 28, 1972	Table showing estimated costs for New Routes
January 29, 1972	Report from T. Fluhr, Geologist, on the water inflow in the Roosevelt Island Shaft.
January 31, 1972	Mayor Beame to Chairman Ronan requesting current cost estimates of New Routes and anticipated sources of funds.
February 11, 1972	Request to the Board of Estimate to establish Northern Blvd., north of 41st Avenue, Queens as the point of connection between Routes 131-A and 131-B instead of a point south of the LIRR at Honeywell Street.
February 16, 1972	Letter from J.T. O'Neill to the Tri-State Regional Planning Commission requesting that the Tri-State revise the previous application to UMTA to include Consultant engineering funds to study 131-D/133 and 131-B (Total $1,090,000).
March 16, 1972	A report giving costs of the New Routes as of January 1, 1972 (Total cost of 11 routes - $2.424 Billion). (Separate File)
March 23, 1972	Approval of State DOT of MTA application for federal assistance for East 63rd Street Line.
April 20, 1972	Board of Estimate approved Rt. 131A (Remod.) and Rt. 131-B (Remod.)
Undated	Table showing approval dates for all 11 Routes
July 14, 1972	MTA Board approves A/C and UPES for all New Routes stations; Consultant to make Phase I studies for the Atlantic and Montauk Branches (RT. 131-D), supports the proposal for not proceeding with the Utica and Nostrand Lines.
August 15, 1972	Ground broken for Section 1, Archer Avenue Line
August 28, 1972	Service and Car Requirements - New Routes
September 18, 1972	G. Ziegler's memorandum giving New Routes status report as of September 15, 1972
September 19, 1972	Liebman to Adler indicating that equipment which will be installed in the 63rd St. Tunnel would be subject to deterioration, vandalism and theft. Maintenance of Way would be willing to operate and maintain the equipment provided that they are reimbursed.
September 22, 1972	MTA Board approves the award of Section 11, Route 132-A to Slattery.
October 5, 1972	Letter to M. Merola, Finance Committee Chairman, giving schedules for New Routes Program.
October 27, 1972	A report giving funding requirements for the seven primary routes (131-A, 131-B, 131-D, 132-A, 132-B 132-C and 133) - Total cost (with inflation) - $2,576 Billion (Separate File)
December 6, 1972	Minutes of a Game Plan Meeting on November 30, 1972. One of the items discussed was maintenance of equipment. Maintenance of Way would and could maintain the equipment.

February 7, 1973	Connection of By-pass tracks (Rt. 131-B) - RTO Comments
March 8, 1973	Culhane to O'Neill recommending approval of additional Consultant fee for technical inspection of the 63rd Street Tunnel due to delays in construction of the tunnel (13 months delay).
March 9, 1973	Route 131-B; local vs. express track connections to Queens Boulevard Line.
May 1, 1973	UMTA to the Secretary of DOT requesting approval of Section 4(f) of the EIS, in conjunction with the request for federal funds for construction of Section 4, including a ventilation shaft in Central Park (It was approved May 21, 1973.)
May 15, 1973	O'Neill to UMTA advising them that it is essential to proceed with the track and equipment contracts for the 63rd St. Line. Ventilation system is required to alleviate dampness and fog; drainage and sump system - to remove water infiltration; lighting - for proper maintenance and inspection during the pre-revenue operation period.
May 18, 1973	Minutes of a meeting with the MTA on May 15, 1973 relating to the installation of fire lines and temporary pumping in the LIRR tunnels (63rd St. Line).
May 24, 1973	Ronan to Zuccotti, Chairman of the City Planning Commission, on the status of the Manhattan's portion of the LIRR's 63rd Street Line.
July 2, 1973	UMTA's news release announcing an initial grant for construction of the 63rd Street Line ($62.7M).
July 3, 1973	Long Island Press article relating to the UMTA's $62.7M grant for the 63rd Street Line.
July 25, 1973	Rossum to Adler giving reasons for the design delays of the 63rd St. Line (up to 6 months delay).
July 26, 1973	Map of New Routes, including mileage and running time between stations.
August 3, 1973	Rossum to Kottick, Kowalsky and Oberter directing them to complete the design of the New Routes sections on schedule.
August 17, 1973	Table indicating estimated cost of the New Routes Program (July, 1973).
September 14, 1973	Memo from H. Liebman, Assistant Division Engineer to B. Adler tabulating annual equipment maintenance cost prior to revenue operation.
September 17, 1973	Memo from J. Quinn to J.T. O'Neill giving labor costs for stand-by maintenance.
September 28, 1973	Memo from G. Ziegler to J. Culhane requesting a report why only $80M out of $600M State Funds was expended to date.
November 27, 1973	Memo from L. Rossum to B. Adler enumerating the major factors for the cost increase of the New Routes Program (from January 1972 to January 1974).

December 3, 1973	Memo from S. Dornfeld to B. Adler giving explanation of the increased estimates of the New Routes.
December 4, 1973	Palotta to Culhane indicating that design of Section 5 of the 63rd St. Line is 6 months behind schedule.
January 3, 1974	Memo from J. Culhane to B. Adler requesting a backup for the increased cost of the New Routes.
January 8, 1974	Loshinsky to Rossum indicating that water infiltration may cause future maintenance and operational problems for the LIRR. Therefore, he recommends that sumps, piping and equipment be installed in Manhattan and Queens.
January 25, 1974	Minutes of a meeting with Dr. Ronan at which he approved the recommendations to proceed with the design of a shaft at York Avenue and to split up Section 5 (63rd Street Line) into 2 sections (5A and 5B).
February 15, 1974	Culhane to Law Department concerning acquisition of the gas station on the southeast corner of 63rd Steet and 2nd Avenue.
February 22, 1974	Rossum to Loshinsky indicating that the 1980 operations date for the 63rd St. Line is firm.
March 5, 1974	Woodward (LIRR) to Raabe (MTA) indicating that the amount of water entering the 63rd St. LIRR tunnel is excessive and that weep holes is not a satisfactory method of construction. They recommend a fully waterproof structure.
March 14, 1974	New York State Department of Audit and Control Report on the New Routes Program.
April 2, 1974	Memo from J.T. O'Neill to D.T. Scannell commenting on the State's March 14, 1974 Audit Report.
Undated	Report on the reasons for delays in the construction of the New Routes.
April 2, 1974	State Transportation Bond Act was revised to nullify the upset amounts that could be used for each route.
April 3, 1974	Adler to Woodward (LIRR) indicating that a structural waterproofed invert will be constructed for the LIRR structure in Sections 6 and 7 (Rt. 131-A).
April 25, 1974	F. Veit (Project Engineer) to Weipahl (Subdivision Engineer) recommending that, based on the experience with the 63rd St. East River Tunnel, provisions for chemical grouting be added to all tunnel contracts to seal the wet areas.
May 7, 1974	Rossum and Loshinsky to J.T. O'Neill forwarding recommendations concerning waterproofing policy for New Routes.
May 17, 1974	Valenza to Adler recommending that chemical grouting be added to all rock tunnels.
June 11, 1974	deRoos to City agencies transmitting maps for acquisition of the 2nd Avenue Gas Station.
June 14, 1974	Raabe (MTA) to O'Neill indicating that the amount of water entering into the LIRR structure is excessive.

July 1, 1974	Memo from C. Turin to J. Culhane indicating that property acquisitions are being delayed due to the complex acquisition procedures.
July 3, 1974	Memo from J. Culhane explaining the revisions in the State Act.
July 11, 1974	G. Ziegler's memo informing about the understanding with City Planning Commission relating to the working relationship with Architectural Consultants for the New Routes.
July 24, 1974	Minutes of MIS held July 11, 1974 (New Routes Program).
August 29, 1974	Minutes of a meeting on August 22, 1974 with the City to discuss property acquisition procedures.
August 30, 1974	O'Neil to Yurich indicating that P,B,Q&D has been selected to perform a feasibility study for using a TBM for tunneling along 63rd Street, as requested by the City.
September 4, 1974	Memo from J. Quinn to J.T. O'Neill rejecting the use of suspended ceilings at new stations.
September 11, 1974	City's approval of an Agreement with PBQ&D for a feasibility study on the use of a TBM along Rt. 131-A in Manhattan.
September 18, 1974	O'Neill to Yurich informing him that P,B,Q&D will be told to proceed with TBM study on September 19, 1974.
September 19, 1974	J. Culhane's memo highlighting the critical sections which may have an effect on the start of operations on the New Routes.
September 30, 1974	Minutes of MIS meeting held September 11, 1974.
October 11, 1974	Priority Program Plan (7 Routes - 131-A, 131-B, 131-D, 132-A, 132-B, 132-C and 133) were presented to the MTA Board.
October 16, 1974	G. Ziegler's minutes on the October 11, 1974 Board meeting.
October 23, 1974	Practical Objective Plan - Scheme 1B for 7 Priority Routes (131-A, 131-B, 131-D, 132-A, 132-B, 132-C, 133) Total Cost - $3.49 Billion (January 1974 base) (Filed separately)
October 23, 1974	Memo from M. Loshinsky to S. Valenza on the administration and maintenance of completed structures. A review is to be made as to what is necessary to maintain structures (pumping, temporary lighting, ventilation). There is a need for a maintenance contract. Another alternative is to assign maintenance personnel to perform maintenance work.
October 25, 1974	G. Ziegler's minutes on a meeting with Mayor on the "Game Plan" - 7 Priority Routes.

November 4, 1974	Memo from R. Prince to D. Yunich re "wrap-up" insurance.
November 7, 1974	Letter from D. Yunich to F. Heringer transmitting booklets of a presentation given to UMTA October 29, 1974.
November 7, 1974	Chairman Yunich's press conference on the MTA's New Routes Plan.
November 8, 1974	J. Culhane's minutes of a meeting on October 30, 1974 with State agencies on the New Routes Program.
November 8, 1974	J. Culhane's minutes of a meeting on October 31, 1974 with the Board of Estimate on the New Routes Program.
November 14, 1974	Quinn to O'Neill accepting East River Tunnel (Section 1)
November 25, 1974	Valenza to Quinn stating that the Roosevelt Island Station Finish Contract will have provisions to stop or control leaks in the East River tunnel.
November 26, 1974	F. Palotta's memorandum outlining interim goals to meet route operation dates in the "Game Plan".
December 3, 1974	Letter from State's Division of Budget denying funding for 132-C and 133.
December 12, 1974	Program Plan for 4 routes: 63rd Street, Super-Express, Southeast Queens, Jamaica "EL" Connection (Filed separately)
December 13, 1974	Chairman Yunich reported to the MTA Board on a meeting with the Mayor on December 12, 1974 at which the Mayor stated that all new subway expansion will be halted except on the 63rd Street Line, southeast Queens Line and possibly Queens Express Bypass.
December 17, 1974	Rossum to Adler relating to the problems with the design of Section 5A, Rt. 131-A.
December 18, 1974	Culhane's minutes of a meeting with the City Planning Commission to brief the Bronx Borough President on the City's Plan to proceed only with the Queens Lines.
December 18, 1974	Manhattan cable TV request to lease ducts in the 63rd Street Tunnel.
December 18, 1974	Brief history of the approvals of the 11 routes.
December 23, 1974	G. Ziegler's minutes on a meeting with City, MTA and UMTA on the City's New Routes Program.
January 14, 1975	MTA Board intends to proceed with the 7 routes program as presented at the October 11, 1974 meeting.
January 15, 1975	Adler's memorandum stating that cost estimate for Section 5A has been adjusted from $117M to $150M.
January 20, 1975	Kalkhof to O'Neill stating that specifications for stations being constructed for the New Routes Program are to include proposals for service contracts for interim and final maintenance (escalators, elevators, air cooling systems, CCTV). Interim service contract is to be chargeable to capital funds and the final service contracts - to operating funds.
January 24, 1975	J. Culhane's minutes on a meeting with LIRR on interface items.

January 27, 1975	Rolnick to Ziegler stating that there is as yet no provision for maintaining equipment. Prompt action must be taken to set up a procedure for maintenance of equipment which will be installed on New Routes.
February 4, 1975	G. Ziegler's minutes on a meeting with UMTA on January 27, 1974. UMTA wants a decision on the 2nd Avenue Line.
February 4, 1975	G. Ziegler's review of 1974.
February 7, 1975	Ziegler to Adler appointing him the chairman of a Committee to make recommendations on the maintenance of equipment prior to operation.
February 11, 1975	G. Ziegler's minutes of the MIS meeting held February 10, 1975.
February 19, 1975	J. Culhane minutes of a meeting on February 5, 1975 on LIRR interface items.
February 20, 1975	Minutes of meeting on February 18 re maintenance of equipment prior to revenue operations.
February 20, 1975	Minutes of MIS meeting held February 10, 1975.
February 27, 1975	Law Department memorandum concerning restrictions on the importation of steel from South Africa or Southern Rhodesia.
March 3, 1975	Law Department to Engineering Department giving legal opinion on continuing trespass of tunnel on adjacent structures.
March 6, 1975	Mombach to Adler giving estimated costs for maintaining power equipment.
March 13, 1975	L. Rossum to B. Adler giving estimated costs of New Routes by sections.
March 19, 1975	Presentation to the MTA Board on the City's Plan.
March 20, 1975	G. Ziegler's memo on funding approvals pending with the State.
March 20, 1975	City's Report - "Transporation: Policy and Program." City proposes a Six Year Program for (a) Fare Subsidies ($2.3B), (b) Subway Expansion Program ($1.5B) and (c) Improve Existing System ($1.35B). Second Avenue Line is deferred. (Filed separately)
March 25, 1975	J. Culhane to G. Ziegler on problems with the City; Property acquisition, fees for Consultants, obtaining of CBX's.
April 2, 1975	Queens Trunk Line Program Plans: 1. Practical Funding Plan ($1.47B/6 years) 2. Moderate Funding Plan ($1.1B/6 years) 3. Mimimum Funding Plan ($0.8B/6 years) (Filed separately)
April 8, 1975	Minutes of an interdepartmental meeting of April 3, 1975 concerning responsibility to maintain equipment prior to revenue operation.

April 9, 1975	G. Ziegler's minutes of a meeting with Chairman Yunich on April 8, 1975 to discuss the proposed City's Six Year Program. (Three levels of funding $1,474B, 1.1B, 810M)
April 10, 1975	Minutes of an in-house meeting on March 24, 1975 on the Game Plan.
April 11, 1975	Presentation given to the MTA Board on the 63rd Street Line, Queens Express By-pass and Archer Avenue Line. Board approved modification of the 63rd Street Line to include Northern Boulevard Station.
April 17, 1975	Engineering memos referring to pumping equipment and electrical service needs to prevent "extreme condensation and deterioration of metallic structures" in the completed sections along 2nd Avenue Line.
May 9, 1975	TA Board resolution accepting $144M for the construction of the 63rd Street Line.
May 14, 1975	Adler to Meberg and Berger indicating that a draft of Service Contract to maintain equipment prior to revenue operation must be prepared immediately.
June 3, 1975	M. Loshinsky to L. Rossum giving estimated time of construction for the New Routes projects.
June 6, 1975	L. Rossum to B. Adler giving estimated construction time for the New Routes projects.
June 10, 1975	"Outline of the Evaluation of Low Cost Alternatives" prepared by the State.
June 13, 1975	Final Report of Committee on Maintenance of Equipment on New Routes prior to Operations.
June 19, 1975	G. Ziegler's comments on the June 13 report.
June 25, 1975	New Routes Bidding Schedule.
July 30, 1975	F. Veit (Project Engineer) to Weinpahl giving information on the water inflow into the 63rd Street tunnel. (a) The structure was not designed to be a dry structure. (b) It has not been possible to achieve a watertight tunnel. (c) Several construction joints have opened up.
August 7, 1975	New Routes operational dates.
August 8, 1975	Loshinsky's minutes of the August 7, 1975 meeting with the Maintenance of Way personnel re: who will maintain the completed sections? No determination was made at the meeting.
August 14, 1975	The MTA Board approves a resolution permitting the temporary use of capital funds for operating expenses (3(h) borrow).
August 15, 1975	Loshinsky to Ziegler enumerating key issues to be resolved with regard to maintenance of the completed sections (costs of maintenance, source of funds, roll-over provisions).

August 25, 1975	Interim report of the joint committee on the water leakage in the 63rd Street Tunnel.
August 26, 1975	O'Neill to Deputy Mayor Cavanagh outlining bidding alternatives for Section 5B, Rt. 131-A. (TBM method was found by P,B,Q&D to be impractical for Section 5A.)
October 15, 1975	H. Rosenfeld to Rolnick, Rossum, Meberg, recommending what items should be covered in the specifications for the second section where new route sections have interfaces.
October 29, 1975	C. Turin to F. Palotta on the effect of Executive Order #42 on TA New Routes Program.
November, 1975	Preliminary MTA analysis of NYSDOT Alternate schemes to the New Routes Queens Program.
November 12, 1975	Loshinsky and Valenza to Ziegler outlining ventilation and shaft rquirements for the 63rd St. Line. A ventilation shaft at York Avenue is recommended.
November 26, 1975	O'Neill to Raabe (MTA) listing contract delivery dates for contracts involving LIRR.
December 2, 1975	Rossum to Meberg outlining bidding alternatives for section 5B, Rt. 131-A.
December 19, 1975	Tremko to Rossum on the water inflow. The water inflow in Sections 1, 2 and 3 is far below what could be considered a heavy inflow. In his opinion installation of a perforated drain on Section 5B would solve the LIRR objections to a wet invert.
December 22, 1975	Engineering memos and policy statement on securing completed 2nd Avenue Line structures.
December 23, 1975	Rossum to Loshinsky indicating that a full structural invert to exclude water from entering the structure, is not warranted.
December 29, 1975	Rossum to Loshinsky stating that he does not anticipate the use of a structural invert where the Authority's trackways are on rock.
December 31, 1975	Loshinsky and Rossum to Ziegler spelling out the ground rules to be used in the determination whether to provide structural invert in Section 5B. Structural invert is to be used only if a decomposed rock is encountered or if the water inflow exceeds the capacity of the drainage system.
January 5, 1976	J. Tremko to S. Valenza re takeover by in-house forces of Phase III technical inspection performed by Consultants.
January 28, 1976	Raabe to O'Neill outlining the articles to be incorporated in contract specifications for Section 5B to prevent water inflow into the structure.
February 5, 1976	M. Loshinsky to J. Culhane enclosing a tabulation of costs for maintaining completed new routes sections.
February 5, 1976	O'Neill to Kauffman recommending that Maintenance of Way take over the maintenance of the completed 2nd Avenue Line structures.
February 17, 1976	Loshinsky and Valenza to O'Neill recommending that bidding options for Section 5B be limited to two options: (a) Drill and Blast and (b) TBM.

February 17, 1976	Apanasevich to Culhane, comparing the original and present costs of Rt. 131-A ($189M vs $675M) and giving reasons for the cost increase.
March 10, 1976	C. Kalkhof to S. Kauffman agreeing to maintain 2nd Avenue Sections (11, 13 and 5) on an overtime basis with funds from the Capital Budget.
March 25, 1976	Loshinsky to Ziegler indicating that there are unresolved funding problems regarding maintenance of the New Routes prior to revenue operation.
April 5, 1976	J.T. O'Neill to S. Kauffman informing him that UMTA will not pay for maintenance of new routes structures at overtime rates.
April 20, 1976	S. Kauffman to J. O'Neill stating that if Feds and City won't pay for maintenance of new routes at overtime rates, then it must be done by contract.
April 23, 1976	Kauffman to O'Neill giving estimated annual pumping costs for Rt. 131-A.
May 9, 1976	Preliminary injunction complaint and answer, East 63rd Street Associates vs. Secretary of Transportation.
May 11, 1976	Request from lawyer for Block Association asking for a postponement of contract.
May 12, 1976	Preliminary injunction halting construction.
May 14, 1976	Messrs. O'Neill and Loshinsky gave a presentation to the MTA Board on the status of the 2nd Avenue Line. Recommendation was made to terminate architectural consultants after completion of Phase I work, and cessation of design work by DeLeuw Cather.
May 14, 1976	Memo from W. Allison, Executive Officer, MTA Operations, to J. deRoos suggesting that the MTA and TA guide and monitor a study to be performed by the City Planning Commission "Impact Area Study for the Queens Subway Expansion Program".
May 17, 1976	Order vacating TRO and denying Preliminary injunction.
May 24, 1976	J. Apanasevich to S. Rolnick listing equipment cost estimates for the 5 units of the Program.
May 28, 1976	J.T. O'Neill to J. DeRoos stating that a study to be performed by the CPC "Impact Area Study for the Queens Expansion Program" is not necessary since the Queens Trunk Line is already under construction.
June 2, 1976	R. Schuler, State DOT Commissioner to D. Yunich requesting a presentation on the MTA's program for integrating the commuter rail facilities with the Queens New Routes Program.
June 10, 1976	M. Loshinsky to J. Mombach requesting that a meeting be arranged with Con Ed to alter their policy of not providing a permanent electrical service to the New Routes sections prior to revenue operation.
July 9, 1976	MTA Board files an application to UMTA for the amended 63rd Street Line to include the Northern Blvd Station and an emergency ventilation shaft at York Avenue.
July 9, 1976	Minutes of the MTA Board meeting on July 9, 1976 to amend application for Rt. 131-A.

July 28, 1976	M. Leibowitz's memo giving funding requirements for the 5 elements of the Queens Trunk Line.
August 2, 1976	Minutes of a meeting with Rockefeller Institute on July 29, 1976 relating to the proposed construction of the York Avenue Shaft.
August 5, 1976	Tremko to all subdivision and Project Engineers stating that due to manpower shortages, there is a possibililty that concrete will be delivered to jobsites without MI Division Inspection. In that case, (a) MI Division will notify the project office ahead of time that non-inspected concrete will be delilvered and (b) concrete cylinders will have to be taken by field personnel which will be picked up by MI for testing.
August 12, 1976	M. Loshinsky to S. Kottick, S. Dornfeld and S. Rolnick requesting a review of estimates for each section because of a possibility that "full funding" will be provided by UMTA.
August 18, 1976	B. Lane's memorandum stating that it is increasingly difficult to maintain 100% batch plant inspections of concrete. Therefore, when inspection is omitted, appropriate steps must be taken to insure the integrity of the material, such as taking of cylinders.
August 19, 1976	C. Brody to M. Loshinsky giving Signal & Communications costs for the Queens Trunk Line.
August 19, 1976	J. Mombach to J. Apanasevich giving Power costs for the Queens Trunk Line.
August 26, 1976	L. Rossum to M. Loshinsky giving general construction, Station Finish, Track Installation and Boring Contracts costs for the Queens Trunk Line.
August 30, 1976	C. Turin's memo giving the status of Property Acquisition.
August 31, 1976	S. Rolnick to M. Loshinsky giving Equipment cost estimate for Archer Avenue storage.
September 1, 1976	Meeting with Chairman Yunich on the location of the York Avenue Shaft.
September 13, 1976	Culhane's memorandum giving estimated costs of the LIRR Midtown Manhatthan Line.
September 13, 1976	Congressman Koch to Yunich requesting a meeting to discuss the location of the York Avenue shaft.
September 16, 1976	Culhane 's minutes of a meeting with Community Board #8 to show alternative plans which were considered by the Authority for the York Avenue Shaft.
September 23, 1976	Subway Ventilation Criteria
September 24, 1976	"Queens Trunk Line Program Plan" based on the $300M yearly UMTA Grant (2nd Draft) (Filed Separetely)
September 27, 1976	Ziegler to O'Neill relating to the forthcoming meeting with State Senator Goodman and Congressman Koch to discuss York Avenue Shaft.
October 1, 1976	Minutes of a meeting with Storch Engineers on September 29, 1976 in conjunction with their review of the York Avenue Shaft for the Rockefeller Institute.
October 7, 1976	J. Culhane to J. Mombach giving Revenue Operation dates for the Queens Trunk Line.

October 7, 1976	Policy on securing completed structures of the 2nd Avenue subway. Engineering Department's response to Rapid Transit's request for additional means of egress from Routes 132-A and 132-C.
October 8, 1976	Valenza to the City's Budget Examiner Leventhal outlining the work required in maintaining the completed 3 sections on the Second Avenue Line.
October 13, 1976	J. Culhane's memo on forthcoming presentations to the Board and the State on the New Routes Program.
October 18, 1976	Minutes of a meeting with political leaders on October 14, 1976 to discuss the York Avenue Shaft.
November 3, 1976	Wangenstein to Kramis discussing slurry wall construction on the new routes projects
November 4, 1976	J.T. O'Neill to J. DeRoos on the forthcoming meetings on the New Routes.
November 18, 1976	Minutes of a meeting with Deputy Mayor Burton to discuss the York Avenue Shaft.
November 23, 1976	V. Marrero, Chairman - Department of City Planning to J.T. O'Neill re: procedure for acquiring properties.
December 6, 1976	Loshinsky to O'Neill giving reasons why the York Avenue Ventilation Complex is required as a construction shaft for Section 5B.
December 10, 1976	Report on New Routes Alternatives.
December 16, 1976	O'Neill to the City's Transportation Administrator giving a detailed report why a ventilation facility at York Avenue is required.
January 11, 1977	Loshinsky to Ziegler commenting on the Jenny Engineering Corporation recommendation to use a work shaft at Roosevelt Island for construction of Section 5B.
January 14, 1977	Minutes of a meeting with UMTA on January 12, 1977 to explain the purpose of the ammended EIS (shaft at York Avenue, extension of Rt. 131-A 800 ft. east of Northern Blvd. to include the entire Northern Blvd Station in Rt. 131-A).
January 19, 1977	G. Ziegler's article - 7 Years of Subway Construction
February 1, 1977	Ziegler's memoarandum on a briefing given to the MTA Board on January 31, 1977 concerning the Public Hearing to amend the application for RT. 131-A.
February 9, 1977	Culhane's minutes of a meeting with Community Board #8 on February 7, 1977 concerning the York Averue Shaft.
February 9, 1977	O'Neill to Fisher informing him that due to new UMTA regulations concerning the EIS, the scheduled Public Hearing to amend Rt. 131-A must be postponed by a month to the week of April 25.
February 24, 1977	S. Rolnick to M. Loshinsky listing equipment items to be installed in the LIRR sections of the New Routes.
March 10, 1977	S. Rolnick to B. Adler giving energy costs prior to revenue operation.
March 10, 1977	Rolnick to Pisani (Assistant to Deputy Chief Engineer) giving a listing of contracts to be turned over to Maintenance of Way.

March 17, 1977	Tremko to Pisani giving a listing of contracts to be turned over to Maintenance of Way.
March 24, 1977	S. Valenza to C. Kalkhof giving a tentative schedule for completion of contractor's work and turn-over to Maintenance of Way.
March 30, 1977	C. Kalkhof to S. Valenza on interim maintenance for New Routes stating that Maintenance of Way is processing a Budget Amendment but no interim maintenance will be performed unless reimbursement funds are appropriated.
April 12, 1977	Mayor Beame to Chairman Fisher requesting postponement of the hearing on the York Avenue Shaft and Chairman's reply agreeing to postpone the hearing.
April 19, 1977	L. Rossum to C. Turin requesting that a study be performed to determine whether any station elements should be deleted due to partial operations on the New Routes.
April 20, 1977	Loshinsky's memorandum on a meeting with Scannell on April 20, 1977 to brief him on the York Avenue Shaft.
April 22, 1977	Loshinsky to O'Neill giving a brief summary of events relating to Section 5B and summary of meetings held regarding the York Avenue Shaft.
April 28,1977	Loshinsky's minutes of a meeting on April 26, 1977 with Community Board #8, attended by MTA Board members and TA to discuss the York Avenue Shaft.
April 29, 1977	Fisher to Deputy Mayor Friedman informing him that as result of a meeting in the Mayor's office on April 26, 1977 a task force will be formed to select a consultant to review the problems concerning the location of the York Avenue Shaft.
April 29, 1977	J. Tremko to J. Apanasevich giving completion dates of contracts and the dates when the contracts can accept mechanical and electrical equipment.
May 19, 1977	J. Apanasevich to P. Katz recommending that new enclosure requirements be obtained from Operations for interim operation of the Archer Avenue Line.
May 27, 1977	Ziegler's memorandum on his field trip of the 63rd Street sections under construction.
May 31, 1977	O'Neill to Fisher giving a brief history of Route 131-B (Queens Bypass).
June, 1977	Status of New Routes
June 7, 1977	O'Neill to Fisher briefing him on a meeting with Deputy Mayor Burton concerning the composition of a committee to study the York Avenue Shaft.
June 27, 1977	C. Mendler, Budget Director to A. O'Rourke, Controller requesting approval of Budget Amendment to provide interim maintenance for new routes. (It was approved 8/5/77)
June 28, 1977	Loshinsky to Kalkhof indicating that water seeping into the LIRR trackways of Route 131-A contains a red, slimy, gelatin-like substance. He wants to know whether the water seeping into TA's existing tunnels contains a similar substance.

July 15, 1977	Minutes of the introductory meeting of the Committee to study the York Avenue Shaft: (a) Consultant will not be retained (b) Committee to conclude its studies and foward recommendations by September 30, 1977.
August 26, 1977	J. Tremko to M. Loshinsky relating to M/W request to provide the dates when each new routes section would be ready for turn-over to M/W for maintenance.
September 14, 1977	Palotta to Culhane reporting on an interm audit of the 63rd St. grant by UMTA auditors. There were three financial and two administrative minor findings.
October 19, 1977	Weinpahl to Tremko re: Contractor's proposal to use the impervious sealing treatment in lieu of high pressure grouting for correcting leaks in Section 4, Rt. 131-A.
October 19, 1977	O'Neill to Burton submitting Addendum to Committee's final report on the York Avenue Shaft.
October 20, 1977	Taylor (UMTA) to Kaiser (MTA) inquiring when they can expect progress on Rt. 131-A (Section 5B). He notes that for the past year the project has been held up due to a study related to the York Avenue Shaft.
November 3, 1977	Assistant U.S. Attorney to Law Department notifying of discontinuance of Block Association action. (63rd Street Line)
November 14, 1977	Kaiser to Taylor (UMTA) informing him that Public Hearing to amend Rt. 131-A will be held on December 20, 1977.
November 15, 1977	Stipulation discontinuing Action of Block Association.
November 18, 1977	Community Planning Board #8 to Fisher stating that they oppose construction of the York Avenue Shaft.
December 16, 1977	Kummerfeld's (First Deputy Mayor) memorandum giving brief history of the York Avenue shaft and listing major provisions in the Section 5B contract documents.
December 21, 1977	Loshinsky's minutes of Public Hearing on December 20, 1977 to ammend Rt. 131-A.
December 21, 1977	New York Post article describing the Public Hearing on December 20, 1977.
January 9, 1978	Report from L. Rossum on the impact of an interim operation on the new routes stations.
January 12, 1978	P.B.Q&D. Consulting Engineers to O'Neill, stating that the cathodic protection system be installed as soon as possible in the 63rd Street East River tunnel. Delays in the installation will expose the tubes to a risk of corrosion and subsequent leakage.
February 9, 1978	Minutes of a meeting with Community Representatives to discuss the York Avenue Shaft.
February 10, 1978	MTA Board approved extension of the 63rd Street Line 780 ft. easterly to include the Northern Blvd. Station and to locate emergency ventilation shaft at York Avenue.

February 17, 1978	B. Adler to M. Loshinsky and F. Gatto (M/W) reviewing alternate methods for protection of completed sections and recommending that (a) temporary equipment be rolled-over to subsequent equipment contracts for maintenance and (b) permanent equipment be maintained by a service contract to be administered by Maintenance of Way Department.
March 2, 1978	O'Neill to Menschel outlining the options that will be offered in the contract documents for Section 5B.
March 14, 1978	O'Neill to Menschel clarifying the options for construction of Section 5B.
March 16, 1978	Loshinsky to Adler informing him that he was ju informed by the Maintenance of Way Department that they will maintain the completed sections with their own forces.
March 31, 1978	Oberter to Kottick presenting various schemes for construction of the Northern Blvd. Station.
April 3, 1978	Rossum and Culhane to O'Neill requesting that the easterly limit of the Northern Blvd. Station contract be moved 190 ft. west to avoid interference with Amtrak property. Cost of the Contract - $97.2M.
April 12, 1978	L. Rossum to Brody, Kottick and Rolnick requesting tabulation of all items of major equipment which will have to be maintained prior to revenue operation by M/W in order to develop a budget cost for maintenance.
April 20, 1978	C. Brody to L. Rossum stating that signal equipment will not have to be maintained prior to revenue operation.
April 26, 1978	S. Rolnick to L. Rossum transmitting a tabulation of equipment items to be maintained.
May 2, 1978	S. Kottick to L. Rossum transmitting a tabulation of track items to be maintained.
May 2, 1978	L. Rossum to C. Kalkhof transmitting all items to be maintained prior to revenue operation.
June 6, 1978	UMTA to O'Neill informing that EIS process for the 63rd Street Line has been satifactorily completed.
August, 1978	Analysis by the MTA of the City's DOT Alternate to the New Routes Queens Program. The City's proposal is atttached. (Filed separately).
August 3, 1978	S. Kauffman to J.T. O'Neill transmitting cost estimate for interim inspection and maintenance of New Routes.
August 3, 1978	B. Lane to J.T. O'Neill requesting to obtain Consultant services to determine the causes for paint failures at some New Routes sites.
August 29, 1978	M. Loshinsky to T. Tremko, S. Rolnick and C. Brody to check the job security and to recommend measures to reduce vandalism.
December 22, 1978	Ziegler to Wagner, Chairman of the City Planning Commission transmitting the "Queens Trunk Line Program Plan" dated November 10, 1978. Total cost of the Plan - $1.94B.

February 22, 1979	Letter from H. Fisher to R. Clark, Chairman, Power Authority of the State of New York giving MTA"s power requirements to year 2000, including New Routes.
March 13, 1979	J. Tremko to Subdivision Engineers advising them that since in some instances concrete will not be inspected at the batching plant, taking of cylinders will be required.
May 17, 1979	G. Ziegler to J. de Roos - on the proposed 1979 Bond Issue (For TA - 530 new and rehabilitated subway cars)
June 26, 1979	J. Culhane to G. Ziegler recommending that State Bond Funds be made available for the rehabilitation of the existing system. (To-date State had approved $5M)
August 15, 1979	Shapiro to Jaskot indicating that the taking of cylinders will create additional work for M.I. Division, and therefore, this matter should be looked into.
September 6, 1979	Tremko to Kottick listing remedial work for Section 1 to correct the water problem in the East River tunnels.
September 13, 1979	Fisher to Contractor's Project Manager directing him to improve workmanship on future waterproofing applications.
September 14, 1979	Katz to Jaskot recommending that since it is no practical to take cylinders from every truckload of uninspected concrete, a minimum of three cylinders be taken from every other truckload.
October 1, 1979	State Comptroller's Audit Report on the New Routes Program.
October 5, 1979	G. Ziegler to J. Simpson on the update of the New Routes Program. Priority to be given to Archer Avenue Route.
October 5, 1979	G. Ziegler to J. Simpson giving options for the use of 1967 Bond funds.
October 9, 1979	S. Rolnick to L. Rossum on humid conditions in New Routes tunnels which affect equipment. Damage to fire line heater control boxes. Recommendation to install strip heaters for the installed boxes and to re-design boxes which had not been installed to keep the interior equipment dry. The damaging wet conditions will be eliminated when regular train operations will begin. In the interim, the only way to reduce humidity is by mechanical ventilation.
October 10, 1979	Fisher to Weinpahl advising him that the waterproofing will be thoroughly inspected prior to covering it by the concrete.
October 11, 1979	Culhane to Ziegler informing him that the Third Avenue mezzanine of the Lexington Avenue Station (63rd St. Line) will not be completed for public use.
October 12, 1979	Presentation to the MTA Board on the status and funding of the Queens Trunk Line. Operational dates for the New Routes; 63rd Street - July '85, Archer Ave. - June '84, Jamaica "El"- June '84. Status of R. 131-B to be determined.
October 16, 1979	State DOT's response to the State Comptroller's Audit report on the New Routes.

October 18, 1979	Fisher to Weinpahl advising that the newly applied waterproofing is not acceptable.
October 19, 1979	J. Culhane memo reviewing the history of the LIRR Mid-Town Manhattan Line.
October 19, 1979	Kauffman to Ziegler indicating that a study is needed quickly to connect the 63rd Street Line to the Queens Boulevard Line in oder to optimize the use of the 63rd Street Line.
October 26, 1979	Tremko to Schiavone advising him that the waterproofing workmanship on Section 5A must be improved.
November, 1979	Queens Transit Alternatives - Maps by Booz Allen
November 2, 1979	Schiavone to Ziegler advising him that they continue to have meetings with his subcontractor on the waterproofing workmanship.
November 6, 1979	State Bond Issue passed by the voters.
November 9, 1979	Ziegler to Kauffman indicating that the TA Operations Committee at its October 31, 1979 meeting agreed that the Third Avenue mezzanine of the Lexington Avenue Station (63rd St. Line) should not be opened and that the overall cost of the station be reduced to a minimum.
November 13, 1979	Kauffman to Kalkhof directing him to have the Stations Department involved in the selection of equipment and materials for the Lexington Avenue Station (63rd Street Line) to avoid maintenance problems in the future.
November 16, 1979	Fisher to Weinpahl stating that imperfect application of waterproofing is continuing.
November 29, 1979	Rossum to Apanasevich transmitting an analysis of cost reductions for the Lexington Avenue Station Finish contract.
January 7, 1980	Alternatives for service to Roosevelt Island
January 18, 1980	The MTA Board approved the recommendation to revise A/C Policy for New Routes Stations. (a) Do not preclude future air cooling. (b) Slab over air-cooling street gratings (c) Do not acquire off-site property for cooling towers (d) Proceed with the UPES
January 31, 1980	S. Kottick to L. Rossum indicating that the Stations and Police Departments provide inputs for station design and they review drawings at milestone events.
February 14, 1980	M. Leibowitz's memo updating the September 25, 1979 analysis of the $600M 1967 State Bond Issue.
February 15, 1980	At the MTA Board meeting, J. Simpson discussed a memorandum by the committee on signal contracts that the ATO equipment be not installed on the wayside and that the cab signalling equipment presently in R-44s and R-46s, be disconnected.
February 21, 1980	J. Culhane to J. Willey, State Budget Examiner transmitting M. Leibowitz's memo of February 14, 1980.
February 29, 1980	Initial Plan Alternatives. Booz Allen's description of eight alternatives.
March 11, 1980	Program Report - 63rd Street Line. Investigation of construction options.

March 18, 1980	Memo from W. Dooley to S. Kottick giving estimated costs and delivery dates for New Routes Stations
March 26, 1980	Joint Study by RTO, Operations Planning and Engineering Planning on 63rd Street Line alternatives.
April 3, 1980	Memo from J. Tremko to M. Loshinsky outlining the information he gave to a N.Y. Times reporter.
April 30, 1980	G. Ziegler to L. Rossum directing that the Waiting Zone concept be incorporated in the New Routes Stations.
May 1, 1980	Tremko to Kottick discussing grouting results in the East River tunnels.
May 19, 1980	S. Kottick to Subdivision Engineers forming a committee to make sure that all items are included in the remaining contracts.
June, 1980	Queens Extension of 63rd Street Line - NYCTA Alternative Study
June 27, 1980	C. Kalkhof to S. Kauffman recommending policy for Capital funds expenditures.
July, 1980	New Routes Program Plan - Interim Operation on the 63rd Street Line to the 21st Street Station.
July 11, 1980	Rossum to Brody, Kottick, Meberg and Rosenfeld directing them to develop various options to speed up the letting of contracts for Rt. 131-A.
July 11, 1980	Rossum to Ziegler notifying him that he is looking into possible ways of speeding up the letting of contracts. The 63rd Street Line is to be operational by July, 1985.
July 17, 1980	Dooley's minutes of a meeting on July 7, 1980 to finalize a program plan to permit interim operation of the 63rd Street Line to 21st Street Station. All contracts are scheduled to be completed by January, 1985.
July 24, 1980	G. Ziegler to S. Kauffman recommending a staging of the 63rd Street Line construction (interim operation to the 21st Street Station)
July 29, 1980	Shapiro to Fisher requesting that the problem concerning uninspected concrete be resolved.
August 1, 1980	Fisher to Tremko requesting that priority be placed on supplying inspectors at the batching plant when concrete is batched for Section 5A.
August 5, 1980	Tremko to Lane requesting that Section 5A be given priority assignment of concrete plant inspections.
September 5, 1980	R. Menschel to J. Simpson requesting to accelerate completion of the 63rd Street Line. The master lease requires that service to Roosevelt Island be instituted by December 23, 1984 or the City or UDC can terminate the lease. The City would then be liable for $65M.
September 8, 1980	M. Loshinsky to Brody, Rosenfeld and J. Tremko directing them to expedite completion of those items of the station finish contracts which would permit the earliest opening of the stations to the public.
September 18, 1980	G. Ziegler to J. Simpson giving ridership projections on the New Routes.

September 18, 1980	Rosenfeld to Rossum providing a schedule for subway operation to Roosevelt Island by January, 1984.
September 22, 1980	Rossum to Ziegler indicating that he will be able to schedule January, 1984 as a date for service at Roosevelt Island.
October 7, 1980	Valenza to Rossum suggesting that a coordinator be designated to keep the contract delivery schedule on track to meet the deadline of placing the line in operation in 1984.
October 10, 1980	Simpson to R. Menschel responding to her September 5, 1980 letter. G. Ziegler is currently developing a plan to put the line in operation by December 23,1984.
October 17, 1980	H. Kamamis, City DOT to G. Ziegler stating that they will not proceed with the property acquisitions for the New Routes until MTA"s position relating to the New Routes Program is clarified.
October 21, 1980	Walker (UMTA) to Simpson informing that UMTA will not act on TA proposal to terminate service at 21st Street until they review the TA's Capital Program.
October 30, 1980	Ziegler to Rossum informing him that R. Menschel requested at the October 30, 1980 TA Operating Committee meeting that the Lexington Avenue Station be put into operation at the same time as the Roosevelt Island and 21st Street Stations.
November 12, 1980	J. Culhane to R. Menschel giving an inventory of the under-utilized space in the New Routes structures (TA & LIRR).
December 2, 1980	J. Simpson to H. Walker (UMTA) outlining TA plan to terminate 63rd Street Line at 21st Street Station.
January 16, 1981	Walker (UMTA) to Simpson informing him that UMTA has no objection to the TA's proposal to terminate service at the 21st Street Station.
January 23, 1981	Queens Transit Alternative Study - Booz Allen's report on alternatives and costs.
February 4, 1981	G. Ziegler to Rossum, Loshinsky, Culhane directing them to prepare a comprehensive report on the New Routes which will be discussed at the MTA Board meeting on February 4, 1981.
February 19, 1981	G. Ziegler to J. Simpson on funding ramifications of stopping New Routes.
February 23, 1981	Engineering Department's report - "New Routes Stations."
February 24, 1981	MTA Board adopted resolutions to (a) defer construction of the Northern Boulevard Station on the 63rd Street Line and transfer the available funds to equip the line which will now terminate at 21st Street in Queens; (b) committing itself to the completion of the Archer Avenue Line.
February 26, 1981	G. Ziegler to J. Simpson forwarding a report on the New Routes Stations which will be discussed at the March 4, 1981 TA Committee Meeting.
February 27, 1981	H. Rosenfeld to E.R asking him to call A. Olivier of Con Edison to find out the Con Edison's basis for stopping all work to provide electrical service to New Routes.

March 2, 1981	C. Turin memo relating to the Con Edison's requirements.
March 4, 1981	J. Apanasevich to Ziegler informing that the Lexington Avenue Station will not be opened until July, 1985 because of a shortage of funds in fiscal year 1982 to fund the station finish contract.
March 5, 1981	G. Ziegler to M. Loshinsky suggesting that M. Loshinsky think about setting up a coordination office for the New Routes Stations Finish contracts.
March 5, 1981	M. Loshinsky to J. Tremko requesting comments on G. Ziegler idea to set up a coordination office.
March 10, 1981	G. Ziegler to L. Rossum giving advertising dates for the Station finish contracts.
March 10, 1981	J. Simpson to H. Walker transmitting MTA Board's February 24, 1981 resolution re: New Routes.
March 10, 1981	P. Katz reporting that the TA Committee met on March 6, 1981 and recommended that the six New Route stations be completed as outlined in the New Routes Stations Report, dated February 23, 1981.
March 11, 1981	J. Simpson to the MTA Board outlining TA Committee's recommendation related to the Station Finish Contracts.
March 11, 1981	G. Ziegler to J. Simpson - funding for Lexington Avenue Station Finish.
March 11, 1981	J. Tremko to M. Loshinsky outlining special requirements for New Routes Station finish contracts.
March 11, 1981	P. Fisher, Subdivision Engineer commenting on G. Ziegler's suggestion of March 5. He indicates that coordination should be done within the Project Engineer's office and that formation of another organization outside the Project Engineer's office would duplicate the functions.
March 12, 1981	J. Tremko to M. Loshinsky stating that the station finish contract can be coordinated by the contractor.
March 13, 1981	MTA Board approved the TA Committe's recommendation to delete 2 escalators at the Roosevelt Island and 4 escalators at the Sutphin Blvd stations for a saving of $1.6M.
March 16, 1981	M. Loshinsky to J. Tremko stating that an overall route coordinator is required. It will not be in a conflict with the Project Engineer's responsibilities.
March 16, 1981	G. Ziegler's memo indicating that the MTA Board at its March 13, 1981 meeting, approved Engineering Department's recommendations contained in the February 23, 1981 report "New Routes Stations."
March 30, 1981	M. Loshinsky to Tremko, Brody and Rosenfeld submitting to them for comments a description of the functions of the Coordinator for New Route Construction.
March 31, 1981	F. Palotta to G. Ziegler suggesting that a construction Management Consultant be brought on board as quickly as possible.
April 3, 1981	J. Culhane to L. Rossum advising that elevators at all stations are to be installed.

April 8, 1981	M. Loshinsky to B. Adler submitting a description of the functions of the Consultant CPM Coordinator.
April 9, 1981	J. Apanasevich's minutes of April 6 1981 Deputy Chief Engineer's meeting. J. Culhane is to coordinate the 5-Year Program.
April 14, 1981	M. Loshinsky's memo on a meeting with GCA on the New Routes Program.
April 15, 1981	J. Culhane to D. Welch, TA Budget Director, giving operational dates and incrimental increase in operating costs.
April 17, 1981	S. Kottick to L. Rossum advising that they are proceeding on the basis of using the slatted ceilings at stations.
April 24, 1981	Minutes of April 24, 1981 Queens Borough Board meeting on the Queens Transit Alternatives Study performed by Booz, Allen and Hamilton for the City DOT.
April 27, 1981	Turin to Culhane recommending that no further consideration be given to a proposal to use the Lexington Avenue Station as a car maintenance facility.
May 5, 1981	C. Marczewski (MOW) to M. Loshinsky partially accepting tunnel lighting on Section 4 (5th Avenue to Park Avenue). All fixtures or equipment affected by the water must be replaced under the "wrap-up contract."
May 19, 1981	R. Bozzo (Equipment Division) to H. Rosenfeld inquiring whether there is a policy on maintenance of New Routes Sections. It is his understanding that the following contractor takes over the maintenance of the section completed by the previous contractor.
May 20, 1981	H. Rosenfeld to M. Loshinsky indicating that there is a need for a definitive policy on the maintenance of the completed New Routes Sections.
May 21, 1981	M. Loshinsky to H. Rosenfeld advising him that under the roll-over policy the next contractor is performing routine maintenance but any defective equipment will be replaced under the "wrap-up" contract.
May 27, 1981	W. Dooley's minutes of a quarterly review meeting with UMTA.
June 1, 1981	Recommendation to select O'Brien-Kreitzberg & Associates, Inc. as a CPM Coordinator for the New Routes.
June 3, 1981	Train storage possibilities at the Lexington Avenue Station (63rd Street Line).
June 4, 1981	Turin to Rossum requesting that design areas review the Lexington Avenue Station to determine whether the unused tracks can be used for train storage.
June 10, 1981	Marchewski (MOW) to Rossum commenting on the scope of work for the wrap-up contract. He requests additional items before the route can be put in service.
June 18, 1981	J. Simpson to D. Plavin (MTA), outlining TA's responsibilities during the administration of the 5-Year Program.
June 23, 1981	M. Liebowitz's memorandum updating the status of the 1967 Bond funds.

June 24, 1981	Recommendation to select O'Brien-Kreitzberg & Associates, Inc. as a CPM Coordinator for the New Routes.
June 29, 1981	Ziegler to Simpson recommending that the unused trackways at the Lexington Avenue Station be equipped to store 4 trains. Approved by Simpson on July 13, 1981.
July 2, 1981	Kottick to Rossum indicating that the total cost for providing train storage at the Lexington Avenue Station is $4.1M.
July 14, 1981	Ziegler to Simpson informing how we will implement the plan for using unused trackways for storage of trains at the Lexington Avenue Station.
July 20, 1981	Marczewski to Loshinsky submitting punch list items for Section 6, Rt. 131-A.
July 23, 1981	Letter to the City's Office of Management and Budget requesting approval of O'Brien-Kreitzberg & Assoc. as a CPM Coordinator of the New Routes.
July 30, 1981	Marczewski to Loshinsky indicating that because of insufficient space, Maintenance of Way cannot accept for storage fire hoses, nozzles and hose racks. The equipment should be stored in a warehouse.
August 24, 1981	Tremko to Loshinsky commenting on the July 30, 1981 letter from Marczewski. Unless otherwise directed, all fire line equipment will be installed.
September 3, 1981	Letter to the City's Board of Estimate requesti approval of O'Brien-Kreitzberg & Assoc. as a CPM Coordinator of the New Routes.
September 17, 1981	Marczewski to Rossum listing the items of work to be included in the wrap-up contract. He does not concur with the opinion that the structures will be almost dry once trains and ventilation are in normal operation.
September 25, 1981	G. Ziegler advising that the MTA Board approved the 5-Year Capital Revitalization Plan.
September 25, 1981	Genova to Adler reporting on a Board of Estimate meeting at which O'Brien-Kreitzberg's contract was approved.
October 5, 1981	Memo from Assistant Secretary to the Transit Authority stating that the Agreement with O'Brien-Kreitzberg was delivered on November 2, 1981.
October 14, 1981	Jamaica "El" Connection - comments by RTO
October 22, 1981	Tremko to Jaskot requesting a report to summarize the responsibility of providing temporary pumping for Section 6, Rt. 131-A.
November 6, 1981	Ziegler to O'Brien - Kreitzberg & Associates authorizing them to begin work on November 12, 1981.
November 13, 1981	Kottick to Palotta requesting that funding be provided for the replacement items in the wrap-up contract for which UMTA will not provide funding.
December 3, 1981	Tremko to Loshinsky informing him that where fire lines have been or are being installed, the contractors have been directed to install fire hoses and to leave the lines wet.
December 18, 1981	Ziegler to Rossum informing him that it has come to his attention that Mel Levy of CEAD is saying that there is a deficiency in the design of the 63rd Street Tunnel. Rossum is to give a report.

December 23, 1981	Loshinsky to Tremko and Rosenfeld relating to the field trip. Several leaks were noticed. He wants to be informed how the situation will be corrected.
January 5, 1982	Tremko to Loshinsky indicating that the fire line policy, whereby the system is activated, appears to prevent vandalism.
January 25, 1982	Truskolaski's memo on field investigation of leaks.
February 16, 1982	O'Brien-Kreitzberg Associates progress report giving est. completion dates of all contracts.
March 8, 1982	W. Dooley to J. Culhane indicating that additional $54.5M in Federal Grants would be required to complete Archer Avenue Route.
March 15, 1982	Kaiser to Kopera providing a new punch list for Section 6, Rt. 131-A.
March 17, 1982	M. Loshinsky, Deputy Chief Engineer, to Messrs. Rosenfeld, Tremko, and Brody, Division Engineers, requesting that they meet and come up with a joint recommendation to secure our investment at both Route 131-A and Route 131-D/133.
March 18, 1982	M. Loshinsky to Rosenfeld, Tremko and Brody relating to an agreement with MOW on New Routes maintenance. Fluorescent lights will be turned on and MOW will replace bulbs. Fans will be tested and turned on at least once a week.
April 1, 1982	W. Dooley's memo transmitting March 1, 1982 New Routes Program Plan.
April 7, 1982	H. I. Rosenfeld, Division Engineer, to M. Loshinsky, Deputy Chief Engineer, stating that TA Property Protection should man and control the entrances to segments of Rt. 131-A, citing as a precedent that the TA Property Protection is now covering the 53rd Street Power Control center, which has not been turned over for operation.
April 13, 1982	M. Loshinsky, Deputy Chief Engineer, to H.L. Rosenfeld, Division Engineer, stating that a letter has to be prepared from G. Ziegler, Chief Engineer, to H. H. Roberts, Jr., Vice President, Finance and Administration, requesting that security for the New Routes be provided by Property Protection.
April 13, 1982	Rosenfeld to Loshinsky and Rossum informing them of the latest developments on the reserve electric power.
April 22, 1982	Minutes of a meeting with Con Edison and Power personnel on April 15, 1982 to discuss the alternatives for reserve electric service in lieu of tapping track on substation feeder.
May 13, 1982	W. Wittenborn to J. Tremko forwarding an updated list of facilities during construction of the New Routes.
May 26, 1982	H. Rosenfeld to M. Loshinsky and L. Rossum commenting on scheme developed by Power Department and Con Edison to provide reserve services for Rt. 131-A.
June 4, 1982	Kottick and Levy to Rossum informing him that there are no further questions relating to design deficiency of the 63rd Street tunnel and the matter is closed.
June 10, 1982	Marczewski to Rossum submitting the items of work to be included in the wrap-up contract.

June 14, 1982	G. Ziegler to C. Kalkhof on New Routes Reserve Power as prepared by Con Edison.
July, 1982	Queens Subway Options Study - Capacity Analysis
August, 1982	Queens Subway Options Study - Phase II
August 5, 1982	Parsons Brinckerhoff - Gibbs & Hill to A. Raabe (MTA) submitting final report recommending the protective measures for the LIRR structure.
August 16, 1982	Brody to Tremko transmitting a letter from S-20176 contractor complaining about wet conditions in the signal enclosures.
August 19, 1982	Mombach to Rossum informing that the Power Department will install permanent Cathode Protection System for both TA & LIRR portion of the tunnel. Also wants the Engineering Dekpartment to specify the installation of the hardwire control cable to pick up high water alarms in the nearest TA substation.
August 24, 1982	Rossum to Mombach transmitted a revised report from PBQ&D for preservation of the LIRR portion of the 63rd Street Line.
September 17, 1982	Loshinsky to Brody and Rosenfeld requesting them to make an inventory of the New Routes equipment which will be ready to be maintained.
September 27, 1982	Letter to Queens Borough President Manes re: temporary terminal of "J" trains in Richmond Hill.
September 29, 1982	Loshinsky to Tremko requesting him to investigate the possibility of ordering contractor to work an additional work shift in order to make up the lost time due to strikes.
October, 1982	Engineering Department report on the Archer Avenue Line.
October 11, 1982	Loshinsky to Brody, Rosenfeld and Tremko advising them of the feasibility of going out with a special contract to maintain equipment. Therefore, he wants a list of equipment items to be included in this contract.
October 20, 1982	Loshinsky to Mombach advising him that General Electric is falling behind in its fabrication of equipment.
November 17, 1982	M. Loshinsky, to H.I. Rosenfeld, stating that Equipment Division will be responsible for coordination of information requested in the September 17, 1982 memorandum. A contract must be issued which will provide regular service to newly installed equipment.
November 18, 1982	M. Loshinsky to J. Mombach on the reserve electrical services for New Routes.
December 21, 1982	H. Rosenfeld to Loshinsky outlining procedures for New Routes security and equipment maintenance.
December 23, 1982	Loshinsky to Rossum and Culhane transmitting a complete inventory of equipment which will have to be maintained. UMTA has not ruled out funding of the maintenance contract. Efforts must be made to expedite the award of this contract within the next 6 to 8 weeks.

December 27, 1982	Rosenfeld to NAB directing them to take over maintenance and operation of temporary pumping facilities at Roosevelt Island and Queensbridge Park Shaft.
January 19, 1983	Culhane to Ziegler giving operational dates for 63rd Street and Archer Avenue which he gave to J. Simpson. Calendar year 1985 for 63rd Street Line; Calendar year 1986 for Archer Avenue.
January 25, 1983	Fisher to Tremko transmitting several reports dealing with leaks in tunnel lining at Roosevelt Island.
February 18, 1983	Rosenfeld to Loshinsky forwarding annual cost to maintain equipment (lighting, elevators, escalators, ventilation and drainage).
March 7, 1983	Brody to Rosenfeld listing estimated costs to maintain signal equipment.
March 11, 1983	P. Fisher (Subdivision Engineer) to North Star Construction telling them that they are not properly maintaining and protecting fire line equipment in the area of their contract and that they will be liable for any damage.
March 17, 1983	Loshinsky to Mombach advising him that installation of power equipment is behind schedule.
March 28, 1983	Overdank to Tremko recommending that the water collection system at the 21st Street Station be designed to dispose of the water from leaks.
March 30, 1983	C. Turin to Encyclopedia Britannica giving operational dates for New Routes 63rd Street Line - December 31,1984 Archer and Jamaica - December 31, 1985
April 5, 1983	Culhane to K. McNutt requesting that a budget amendment be submitted to UMTA for providing funds to maintain equipment. 63rd Street Line - $1.325M/yr Archer - $1.300M/yr
April 6, 1983	Mendoza to NAB directing to stop all work on the 21st Street Station platform walls and surfaces due to water problem.
April 8, 1983	Rosenfeld to Loshinsky transmitting annual costs to maintain signals and communications equipment.
April 18, 1983	Rosenfeld to NAB directing to place in service and maintain 12 pumps at Queens and Roosevelt Island shaffs.
April 20, 1983	K. McNutt to Culhane stating that UMTA disavows any commitment to fund maintenance contract. However, they will review the request if scope and cost details are provided.
April 22, 1983	Culhane to Ziegler summarizing the various elements of the maintenance contracts.
April 26, 1983	Minutes of an in-house job conference on April 22, 1983 between Division Engineers, Engineering Department, to discuss the various items involved in implementing a service contract for maintenance, upkeep and security of the New Routes.
May 5, 1983	Job Meeting #19. Water leaks at the 21st St. Station remain #1 problem.

May 5, 1983	Culhane to McNutt suggesting that an inquiry be made to the MTA to verify whether they will accept maintenance of the New Routes facilities as a capital cost, if UMTA will not provide funding. He wants to know when a decision will be made by UMTA and MTA.
May 11, 1983	Chairman Ravitch to Commissioner of NYS Director of Housing and Community Renewal advising him that the construction will be completed by the end of 1984 and subway service to Roosevelt Island will begin by early 1985.
May 12, 1983	Ziegler to Kalkhof enclosing a listing of equipment items to be maintained and asking whether operating forces will maintain it or an outside contractor should be engaged.
May 16, 1983	R. Reid (Equipment) to H. Rosenfeld giving final cost estimates for security, maintenance and upkeep for New Routes Equipment.
May 17, 1983	NAB to TA listing items impacting the 21st Street Station completion.
May 25, 1983	Fisher to SIC noting items to be corrected along Section 5A (Rt. 131-A) as a result of the final inspection on March 1, 1983.
May 27, 1983	Minutes of the Progress Report meeting No. 17 by O'Brien Kreitzberg & Assoc.
June 3, 1983	NAB to Ziegler requesting additional compensation due to water problems at the 21st Street Station.
June 9, 1983	Culhane to McNutt asking to confirm the availability of funds to provide protective measures for the LIRR portion of the 63rd Street line.
June 13, 1983	Loshinsky to Tremko indicating that the 21st St. Station is now relatively dry and, therefore, floor tile should be installed promptly.
June 22, 1983	K. McNutt to B. Sterman (UMTA) requesting funding for maintenance of equipment (Total - $6,386,930)
June 22, 1983	R. Reid, to H.I. Rosenfeld, concerning an in-house meeting held between Mombach and Loshinsky on June 20, 1983 in which it was decided that: (1) M/W will not, at this time, assume the maintenance duties for the New Routes. (2) Engineering should proceed with an outside maintenance and security contract. (3) Engineering will administer the contract; M/W will perform the technical inspection. (4) Power Department will not be included in the proposed maintenance contract. They will maintain and upkeep their equipment in-house.
June 23, 1983	Carter to Kalkhof giving a projection of RTT's equipment, mileage and operating requirements for the new lines.
June 23, 1983	NAB to Ziegler stating that since many areas at the 21st Street Station are still wet, they will not guarantee the floor tile work.
June 24, 1983	Gatusso (security) to Chynsky (Budget) submitting requirements for providing security for New Routes (20 agents at a cost of $1.09M from July 1, 1983 to December 31, 1984.)

July 7, 1983	Loshinsky to Rosenfled informing that J. Simpson will explain the need for a maintenance and security contract at the August TA Committee meeting. He requests back-up information for this meeting.
July 12, 1983	Rosenfeld to Loshinsky on a meeting with Mombach on July 12, 1983. An input was requested from Maintenance of Way for a presentation to the TA Committee on the TA proposal for Maintenance and Protection of New Routes.
July 22, 1983	Mendoza (TA Project Engineer) to NAB Superintendent directing him to drill water control test holes at the 21st Street Station.
July 22, 1983	Bromfield to Kalkhof giving a projection of Station Department's cost of operating and maintaining the new lines.
July 25, 1983	M. Loshinsky, to G. Ziegler, stating that at a June 20, 1983 meeting between Messrs. Mombach and Loshinsky, J. Mombach indicated the M/W did not have the capacity to assume maintenance duties. However, M/W would consider performing the manning required to do the technical inspection of the maintenance contract.
July 27, 1983	Sterman to McNutt turning down the TA's request for federal funds to maintain equipment.
July 28, 1983	Letter from H. Chynsky, Chief Budget Analyst, M/W, to E. Safford, Deputy Director, Office of Expense Analysis, outlining M/W in-house cost for performing the maintenance of the New Routes as follows: FY-1983 $1.87 (M) Second Half of 1984 $1.26 (M) TOTAL (7/83 to 12/84) $3.23 (M) In addition to the above estimate, the Property Protection estimate for security of the New Routes would be an additional $1.09M for a grand total of $4.32M, say $4.5M.
August 1, 1983	McNutt to Wynn advising him that the TA's request for pre-operation costs were turned down by UMTA and therefore they must be covered as operating expenses.
August 4, 1983	Kopera to Mombach giving a projection of the 63rd Street Line manpower requirements for each of the Operating Divisions of M/W.
August 5, 1983	Ziegler to Kalkhof forwarding for comments draft minutes of a meeting on August 4.
August 10, 1983	Cetinich to Kalkhof outling Car Maintenance Department manpower needs due to New Routes, including cost breakdowns.
August 11, 1983	Rosenfeld to Loshinsky on a meeting between Kalkhof and Ziegler on August 4, 1983. Wants confirmation that the following items are to be prepared or re-evaluated: (1) Budget estimates for maintenance of (a) elevators and escalators, (b) security, (c) all other equipment items. (2) Review previous manpower requrements (3) Format of the contract to be prepared.

August 15, 1983	Loshinsky to Rosenfeld advising him that J. Simpson does not want to include any maintenance of the new routes costs in the budget until 1984. Therefore, if necessary, contractors would have to perform work and be reimbursed.
August 15, 1983	O'Brien-Kreitzberg & Assoc. to Ziegler listing the activities that must be completed with regard to the installation of power equipment in order to meet the route construction completion date.
August 17, 1983	G. Ziegler to P. Wynn requesting Property Protection personnel so that protection may start January 1, 1984.
August 25, 1983	Kalkhof, Wynn and Ziegler to D. Scannell recommending that TA proceed with preparing and advertising maintenance and property protection contract. (3 separate contracts)
August 30, 1983	Memorandum from Daniel T. Scannel to members of the MTA Board, outlining an agenda for the September 7, 1983 TA Committee meeting, which included the New Routes maintenance.
September 7, 1983	Memorandum from G. Ziegler, stating that the TA Committee approved the recommendation to proceed with outside contracts for the maintenance of New Routes.
September 22, 1983	Rosenfeld to Meberg requesting that specifications be prepared for maintenance and security contracts.
September 22, 1983	Memorandum from J. Apanasevich, to H.I. Rosenfeld assigning PSE Job Numbers of E-20798, E-20799, and E-2081 for the maintenance and security of the New Routes, respectively.
September 23, 1983	Minutes of a meeting on September 21, 1983 attended by Messrs. Kalkhof, Mombach, Kopera, Burnstein and Chynsky of M/W and Messrs. Ziegler, Loshinsky, and Rosenfeld of Engineering of which the following items were highlighted. (1) Separate contract for escalators and elevators. (2) Separate contract for fans, pumps, lighting, signals, etc. (3) M/W will be responsible for construction administration and technical inspection of the above two (2) contracts.
September 26, 1983	Culhane to Rossum advising him that the securit contract will be in the name of the TA and will be funded by Operating funds.
September 27, 1983	D.T. Scannell's report to the MTA Board of the TA Committee meeting of September 7, 1983. Mr. Kalkhof advised the TA Committee that the TA is contracting out maintenance for the equipment already installed and almost ready for operation.
September 27, 1983	Additional Work Order No. 14 for $13,000 to drill 9 pilot holes through the walls of the 21st Street Station to relieve water pressure. It was approved November 7, 1983.
September 28, 1983	Loshinsky to Kalkhof, Wynn and Ziegler requesting that their representatives attend a presentation on maintenance upkeep and security contracts on October 3, 1983.

October 6, 1983	Minutes of in-house job meetings held on September 27 and October 3 between Engineering, M/W, and Property Protection personnel to formulate the specification and contract documents required for the three (3) contracts; E-20798, E-29799 and E-20801.
October 17, 1983	Mombach to Kalkhof indicating that Maintenance of Way is preparing a budget amendment for the administration and inspection of the Interim-Maintenance contract.
October 21, 1983	Loshinsky's memorandum on the field inspection of the Roosevelt Avenue and 21st Street Stations.
October 21, 1983	Culhane to K. McNutt advising him that memorandums were signed authorizing advertising of the maintenance and security contracts.
October 31, 1983	NAB to Ziegler submitting a proposal to install drip pans to help control water leakage problem.
November 18, 1983	Loshinsky to Tremko directing him to close out Schiavone's contract by the end of the year.
November 22, 1983	Canvass of bids for the maintenance and security contracts.
November 30, 1983	Kottick to Rosssum and Loshinsky submitting a cost estimate ($250,000) to stop all the leaks at the 21st St. Station.
November 30, 1983	Culhane to Ziegler indicating that the bids for the two maintenance contracts will be rejected and the security contract will be awarded.
December 9, 1983	Memo from Caplan to the TA Finance Committee relating to the review of the TA Operating Budget. The memorandum contains an item "New Routes: 3.0 million" for maintaining and protecting facilities along New Routes scheduled to open in 1985.
December 9, 1983	AWO #15 ($113,400) for drilling holes and installing drainage leaders to existing inlets at the 21st St. Station to control water leakage. It was approved January 23, 1984.
December 12, 1983	G. Ziegler to P. Wynn relating to TA Board meeting scheduled for December 16, 1983, noting that the three (3) maintenance and security contracts were not on the TA Committee agenda. He asks whether these contracts would be on the TA Board meeting for December 16, 1983 as an added item.
December 16, 1983	J. Mombach to M. Loshinsky advising him that the newly installed escalator at the Parsons Blvd Station should be covered to prevent deterioration.
December 19, 1983	R. Kopera, Acting Asst. General Superintendent, Engineering, M/W, to C. Moorehouse, Acting Asst. General Superintendent, Operations, stating that as of January 1, 1984, the M/W Line Division will assume responsibility for interim maintenance (technical inspection) of the New Routes.
December 20, 1983	Ziegler to Kalkhof advising him that Operating personnel should commence with the maintenance work on January 1, 1984.

December 22, 1983	NAB to Ziegler indicating that Con Edison will not provide power until water leaking through the ceiling ferrules is stopped. (21st St. Station)
December 29, 1983	NAB to Ziegler indicating that a large quantity of water leaked through the platform walls and ceiling during the weekend of December 24-26, 1983. (21st St. Station)
January 4, 1984	Truskolaski to Mendoza (Project Engineer) indicating that the water had come primarily from the ventilators (21st Street Station)
January 4, 1984	Mombach to Kalkhof advising that 23 people would be required to provide interim maintenance.
January 10, 1984	AWO #17 ($53,988) for sealing leaks in existing ferrules. It was approved February 27, 1984 (21st St. Station).
January 12, 1984	Loshinsky to Ziegler listing bids pertaining to E-20799 (Maint. Service for escalators and elevators) and recommending that this work should be done in-house.
January 13, 1984	Loshinsky to Ziegler listing bids pertaining to E-20798 (Maint. Service for Fans, Pumps, Lighting, etc.) and recommending that this work should be done in-house.
January 18, 1984	Minutes of a coordination meeting to expedite all conflicts between contractors on Rt. 131-A.
February 2, 1984	Mombach to Loshinsky requesting corrective actions to be performed by contractors prior to take over by Maintenance of Way.
February 21, 1984	NAB to Ziegler confirming that they received AWO #15 to drill holes in the subway wall and install drainage leaders.
February 27, 1984	Newman to Kalkhof - A budget amendment requesting additional quota positions for interim maintenance and revenue operations on the 63rd Street Line.
March 12, 1984	Staff memo to Cetinich giving estimated Rapid Transportation costs - 63rd Street Line.
March 16, 1984	Three options for "J" service during construction of Rt. 133 (Jamaica Connection)
April 2, 1984	Ziegler to Gunn listing agenda items for a briefing to Chairman Kiley on the New Routes (copies of the presentation charts are attached).
April 4, 1984	Queens Subway Options Study
April 5, 1984	G. Ziegler to Culhane, Loshinsky and Rossum on a briefing to Chairman Kiley; history, status of construction, projected passenger usage, various options for the connections in Queens to the 63rd Street Line, opening dates, projected operating and maintenance costs.
April 9, 1984	Queens Subway Options Study - Comments from Operations Planning.
April 24, 1984	A review of Planning & Budget's adjustments to R.T.'s 3/9/84 cost table for 63rd Street Line.
April 24, 1984	Green to Kopera restating personnel requirements for the 63rd Street Route.

April 24, 1984	Memorandum from G. Ziegler to C. Kalkhof referring to his December 20, 1983 memorandum which stated that M/W would commence maintenance of the New Routes effective January 1, 1984, which to date, had not occurred and requesting that the takeover and maintenance of equipment be provided without delay.
May 1, 1984	Newman to Towle giving cost schedules with descriptions of headcount requirements for the 63rd Street Line.
May 11, 1984	Delaying opening of the 63rd Street Tunnel - Alternatives from Operations Planning.
May 15, 1984	J. Pennisi, Deputy Commissioner N.Y.S. Division of Housing and Community Renewal to D. Gunn requesting the most recent projection of operation of the line.
May 16, 1984	Listing of maintenance quotas for T&S and Electrical Departments as a result of New Routes.
May 16, 1984	Stanford to Gunn - Report on modified design of Girder G-4 (63rd Street Line)
May 22, 1984	A. Cosenza to D. Gill stating that there is a possibility that if the Authority initiates security measures prior to final completion, it could result in a waiver or diminution of a contractor's obligation.
May 31, 1984	D. Gunn to J. Pennisi, NYS Division of Housing and Community Renewal advising him that all construction will be completed in February, 1985 and revenue operation will start in June, 1985.
June 4, 1984	Ziegler to Wynn requesting to expedite the security arrangements to protect the New Routes.
June 22, 1984	M. Loshinsky's memo reporting on a meeting with P. Wynn and C. Kalkhof on June 22 to discuss when the protection of the New Routes will commence. No indication when the first watchman from Property Protection will be on board.
July 16, 1984	Staff Summary Sheet requesting $103,375 to seal leaks at the 21st St. Station by pressure grouting (Approved Sept. 19, 1984).
July 17, 1984	Fisher to Schiavone directing them to take steps to control water leaks at the Lexington Avenue Station.
July 26, 1984	Service on the 63rd Street Line - Joint responsibility of RTO and Operations Planning.
July 27, 1984	Miller to Ziegler inquiring why the contractor does not have the responsibility to seal leaks at the 21st St. Station at no cost to the Authority.
July 30, 1984	Ziegler to Miller explaining why it does not appear reasonable to backcharge the contractor for sealing leaks at the 21st St. Station.
July 30, 1984	Broderick to Feeley on service on the 63rd Street Line. (RTO Comments)
July 31, 1984	Kottick to Rossum outlining the requested changes by the RTT at the 21st Street and Parsons Blvd. Stations.

August 1, 1984	Tremko to Schiavone directing him to fix water leaks at the Lexington Avenue Station.
August 21, 1984	Proposed Archer Avenue Line Service
August 23, 1984	Loshinsky to Gill asking about Property Protection's monitoring requirements to provide security for the LIRR portion of the 63rd Street Line.
August 24, 1984	Proposed timetable for public hearings on New Routes service plans.
September 4, 1984	Cosenza to Ziegler (Confidential) relating to the AWO #21 to seal leaks at the 21st St. Station.
September 11, 1984	Ziegler to Miller (Confidential) transmitting Cosenza's memo of September 4, 1984 relating to water leaks at the 21st St. Station.
September 18, 1984	Miller to Ziegler approving AWO #21 but requesting an explanation of the water leakage at the 21st St. Station.
September 24, 1984	Schiavone to Ziegler advising that they will not do any additional work at the Lexington Avenue Station unless reimbursed by the Authority.
September 27, 1984	Ziegler to Miller replying to Miller's inquiry of September 18, 1984 re: water leaks at the 21st St. Station.
October 3, 1984	63rd Street Line (Revised Staff Summary Sheet)
October 4, 1984	Miller to Ziegler requesting additional information concerning the leakage at the 21st Street Station.
October 10, 1984	Rossum to Loshinsky indicating that the original design of the 21st Street Station did no anticipate any leakage. However, a track drainage system is capable of handling 3000 gpm.
October 11, 1984	Rapid Transit service through the 63rd Street Line (Staff Summary Sheet)
October 23, 1984	Rosenfeld to Culhane transmitting report outlining recommendations for the preservation of the LIRR and a tabulation of additional costs for 4 contracts (E20144, E20149, S20176 and A20174).
October 23, 1984	Rossum to Kottick requesting a report on leakag into various rooms (extent of leakage, steps to rectify, steps to avoid leakage).
October 26, 1984	Ziegler to Wynn requesting that immediate measures be taken to provide the security for the New Routes sections.
October 30, 1984	Rosenfeld to Loshinsky responding to Mr. Miller's inquiry re: water leakage at the 21st Street Station.
November 7, 1984	Ziegler to Miller responding to Miller's October 4, 1984 memorandum.
November 15, 1984	Harza Engineering Company's report on a trip to the 63rd Street Line on October 31, 1984 to determine the extent of seepage into the tunnels and to determine the necessary work to stop water leakage. Their report indicates that the source of leaks could be traced to cracks or construction joints in concrete. The longitudinal cracks at the Lexington Avenue Station are caused by thermal stresses. Depending on the extent of

	seepage, they recommend the sealing of cracks with waterplugs, urethane grout, joint sealing compounds, etc.
December 6, 1984	Schiavone's minutes of a meeting on the status of contracts 5A and 5B, Rt. 131-A.
December 10, 1984	Fisher's minutes of the December 6, 1984 meeting on the status of contracts 5A and 5B.
December 10, 1984	Riley to Miller on Extension of subway service to 21st Street Station (63rd Street Line)
December 12, 1984	Fisher to Tremko indicating that the responsibility for stopping leaks in the waterproofed areas of section 5A lies with Schiavone and that they should be directed to perform the work.
December 13, 1984	Loshinsky to Mombach recommending that drip pans remain in the electrical and signal line equipment rooms in order to protect equipment in these rooms.
December 14, 1984	Fisher to Schiavone directing him to take steps to stop water leaks on Section 5A.
December 19, 1984	Rossum to Loshinsky recommending the work to be done to control and seal water leaks.
December 20, 1984	Culhane to Broderick asking to be advised what services would be provided for the 63rd Street and Archer Avenue lines.
December 21, 1984	Loshinsky to Bischof and McNamara advising that the contracts for the maintenance and protection of New Routes be re-activated.
December 21, 1984	Project Managers to Division Engineers advising them of a planned inspection tour with the Operating personnel to see what must be done to prepare the New Routes for take over by Operations.
December 27, 1984	Ziegler to Stanford requesting his assistance in providing input as to what must be done to prepare the New Routes for revenue service.
December 28, 1984	McNamara to Loshinsky commenting on Rossum's December 19 memo to Loshinsky.
December 28, 1984	Broderick to Culhane submitting a proposed service plan for the New Routes.
December 31, 1984	Loshinsky to McNamara recommending that a separate contract be prepared to waterproof the tunnel.
January 2, 1985	Culhane to Loshinsky indicating that a Staff Summary Sheet is required to obtain approval of the contract to seal leaks.
January 2, 1985	McNamara to Rossum commenting on the water leaks contract. Grouting should be done, where possible, to eliminate drip pans.
January 3, 1985	M. Loshinsky to Culhane indicating that the Staff Summary will be prepared by the Project Manager next week.
January 8, 1985	M. Christie (Electrical) to McNamara listing the items to be corrected as a result of the inspection tours.

January 9, 1985	C. Meltzer (Stations) to McNamara - items to be corrected.
January 9, 1985	Loshinsky to Culhane outlining the items that need immediate attention.
January 9, 1985	Bischof and McNamara to Loshinsky advising that inspection tours were conducted with Track and Structures, Electrical, Stations and Property Protection Departments.
January 10, 1985	Kopera to McNamara transmitting a listing of items to be corrected which were uncovered during inspection.
January 10, 1985	H. Seda (Property Protection) to McNamara - items to be corrected.
January 10, 1985	H. Seda (Property Protection) to A. Fiore (Property Protection) advising that agreement was reached with McNamara and Bischof whereby security will be provided by the contractors.
January 10, 1985	McNamara to Loshinsky advising him what steps will be taken to provide security for the Archer Avenue.
January 16, 1985	Bischof and McNamara to M. Loshinsky advising that a meeting was held with operating people to review their comments from the inspection tours.
January 17, 1985	Fisher to Loshinsky commenting on the Schiavone's minutes of the December 6, 1984 meeting.
January 23, 1985	Rossum to Loshinsky indicating that he still has not received an authorization to start the design of the water leaks contract.
January 28, 1985	McNamara to Loshinsky responding to comments on the Jamaica New Routes by Operating personnel.
January 28, 1985	Fisher to Schiavone commenting on their minutes of the December 6, 1984 meeting.
January 30, 1985	Bischof (PM) to Loshinsky indicating that a meeting has been scheduled for February 6, 1985 to examine leaks in Section 5A.
January 31, 1985	Mombach to Loshinsky agreeing that the drip pans should not be removed even though most of the water leakage has been eliminated. He requests that the existing pans made with PVC be replaced with an alternate material.
February 1, 1985	Turin to Culhane transmitting a copy of in-house "Analysis of Alternatives" to the Queens Bypass Line.
February 5, 1985	Fisher to Schiavone transmitting punch list items.
February 7, 1985	Schiavone to Ziegler indicating that they will not do any punch list work unless they are reimbursed.
February 12, 1985	Fisher's minutes of a meeting with the contractor relating to completion of Sections 5A and 5B.
February 13, 1985	TA Committee agenda item - Modification of a Consultant Agreement with O'Brien - Kreitzberg. Additional $98,150 is required for coordination work on the 63rd St. and Archer Avenue Lines due to delays in completion of these lines (It was approved by the Board February 15, 1985).

February 20, 1985	Rossum to Loshinsky indicating that active leaks above drip pans will be sealed. Following the grouting, PVC drip pans in equipment rooms will be replaced using fiberglass pans.
March 7, 1985	Oberter to Rossum noting that he cannot start design of the leak repair contract until WAR Certificate is obtained.
March 18, 1985	NcNamara to Loshinsky re: termination of Jamaica service at the 121st Street Station.
March 19, 1985	Oberter to Loshinsky requesting information on the repair of leaks at the 21st Street Station. It is his understanding that only 20% of leaks has been repaired and the funding has been expended.
April 2, 1985	Loshinsky to Ziegler transmitting Fisher's memo which discusses contractual requirements for leak control on the 63rd Street Line.
April 3, 1985	Loshinsky to Oberter indicating that the section of the 21st Street Station which was grouted under AWO #21 is dry. However, only 20% of work was accomplished before funds ran out.
April 8, 1985	M. Ascher to Culhane and Rossum on the meeting with B. Sterman on April 3, 1985. Sterman wants a copy of our final report on the approach to remedy the water problems on the 63rd Street.
April 9, 1985	- Ziegler's memorandum on the April 8, 1985 field inspection of the 63rd Street Line.
April 10, 1985	Loshinsky to Ziegler on the past efforts to stop water inflow on the 63rd Steet Line.
April 15, 1985	Nasti (UMTA) to Gunn commenting on UMTA's tour of the 63rd Street Tunnel. They are concerned about water inflow. It is NYCTA's responsibility to ensure that remedial work be performed but UMTA will not pay for it.
April 17, 1985	Bischof to Culhane giving recommendations to remedy the water problem.
April 21, 1985	Senator D'Amato's public release statement: "Structural Integrity of Tunnel in Question."
April 22, 1985	Loshinsky to Fisher and Weinpahl requesting to know when each section was grouted, what the material was and under what pressures was grouting performed.
April 24, 1985	Loshinsky to Culhane expressing concern about New Routes equipment which is not being maintained.
April 25, 1985	Bischof's memo informing that track inspection will be postponed to Monday, May 20, 1985.
April 25, 1985	Loshinsky to Culhane on a meeting with O'Brien-Krietzberg & Associates (OKA) relating to critical items.
April 26, 1985	Culhane to Stanford, Mombach and Gill suggesting to meet and discuss the options to keep equipment in operating condition.

April 29, 1985	D. Gunn to R. Nasti responding to his April 15, 1985 letter.
April 30, 1985	Weinpahl to NAB advising them not to discontinue watchman service at the 21st St. Station.
May 3, 1985	NAB to Ziegler stating that they will comply with the directive to continue providing watchman service but will add the cost of this service to their claim.
May 3, 1985	Rossum to Pendergast asking for comments on the use of fiberglass for drip pans and drain pipes.
May 3, 1985	Harza Engineering Company's report on a trip to the 63rd St. Line on April 25, 1985 to classify the various types of cracks and to make recommendations regarding their treatment. The report indicates that there is a considerable inflow of water at 4 or 5 locations. Water inflow at the remaining cracks was either minimal or non-existant, which indicates that self-healing of joints is occurring. Depending on the nature of cracks and the extent of water leakage, they recommend using various grouts and sealers. They also recommend a testing program.
May 6, 1985	M. Ascher to Culhane and Loshinsky requesting to know when est. of costs to complete and schedules will be available.
May 7, 1985	Ziegler to Culhane asking for the projected costs to complete the 63rd Street Tunnel.
May 8, 1985	Loshinsky to Paolillo stating that the outstanding AWO's are delaying critical work on the 2nd Avenue shaft.
May 8, 1985	M. Loshinsky's minutes of a meeting on May 7, 1985 with UMTA relating to the water leaks. There are five major leaks; 4 in the river crossing and the fifth in the equipment room in Section 4. It would be best if an independent consultant were selected to determine the extent of the problems. UMTA made clear that they will not fund the consultant study. UMTA will be informed as to TA's action plan.
May 8, 1985	Loshinsky to Project Managers requesting information on the costs to complete and schedules.
May 10, 1985	Rossum to Loshinsky giving an update on the actions already taken and to be taken with regard to the water leaks and transmitting a Staff Summary Sheet for award of a sole source contract to CTL to perform analysis of the tunnel design and to review the structural integrity of the tunnel.
May 10, 1985	Loshinsky to Schiavone directing them to continue temporary pumping.
May 13, 1985	Ziegler to Loshinsky and Rossum suggesting the steps to be taken to get a consultant on board to study the tunnel and asking to continue with the documentation and history on the grouting work that had been performed.
May 13, 1985	S. Pater (Civil Engineer) to B. Bischof informing of the visit by U.S. DOT auditors on April 16, 1985. They were reviewing concrete test reports and concrete tickets.
May 14, 1985	S. Patel to B. Bischof informing of the additional visits by the U.S. DOT Auditors on May 7, 8, 9 and 10.

May 20, 1985	Rossum to Loshinsky on the status of G. Ziegler's May 13, 1985 request for getting a consultant on aboard and a history of the grouting.
May 22, 1985	Loshinsky to Sterman (UMTA) transmitting for comments scope of work for CTL.
May 29, 1985	Oberter to Adler requesting to prepare consultant contract to investigate the structural integrity of the 63rd st tunnels, as requested by UMTA.
May 30, 1985	CTL to Oberter transmitting a proposal for structural evaluation of the 63rd. St. tunnels.
May 31, 1985	Oberter tp CTL forwarding a copy of design calculations on the modified girder G4 in the FDR shaft.
May 31, 1985	P. Fisher's minutes of a meeting with Ziegler on the status of the CTL Contract and the Leak Control Contract.
June 4, 1985	Loshinsky to Fisher and Appelbaum on the ventilation of the 63rd Street Line. Ventilation plants are operational at 3 locations, vents are not operational at 2 locations because of circuit breaker problems and fans at Sections 5A, 5B and 6 have not as yet been installed. Efforts will be made to operate the fans with the line circuit breaker problems, on AC current.
June 5, 1985	Haid (Division engineer) to Rossum on his phone conversation with Terra-Chem Inc. related to the use of the 3M product for grouting.
June 8, 1985	Blumberg's memorandum on the use of TACSS and "Q" seal products for stopping leaks.
June 10, 1985	Blumberg's memorandum of a field trip to the 63rd St. tunnel with Brisk Waterproofing and 3M Company representatives to review leak repairs.
June 12, 1985	Loshinsky to Horn, Tremko and Fisher on critical items.
June 14, 1985	Fisher's memorandum and the attached list of work required for operation of the 63rd Street Line.
June 18, 1985	Fisher to Oberter transmitting Dinhofer's report concerning water leak control measures at the 21st St. Station.
June 19, 1985	Loshinsky to Ascher indicating that there are substantial number of AWO's outstanding as per critical items list dated June 7, 1985.
June 20, 1985	Safford to Oversier giving estimated additional costs in 1986 due to New Routes increment.
June 24, 1985	Ascher to Meberg requesting the status of the designation of a dedicated ad hoc design team.
June 24, 1985	Ascher to Rosenfeld requesting a weekly report to highlight the status of investigations by the DOT audit team.
June 25, 1985	De Neef's letter on the use of their products for sealing leaks.

June 26, 1985	Blumberg's memo on a meeting with Brisk Waterproofing to seal water leaks.
June 28, 1985	A presentation ("Overview of New Routes Progam") was made to the MTA Board by M.C. Ascher. The presentation covered (a) background of the New Routes Program, (b) 63rd St. Line, (c) Archer Avenue Line, (d) Plan of Action.
July 2, 1985	Ascher to Meehan and Feeley requesting to appoint representatives to a team which will asses the time required and cost to place New Routes into operation.
July 3, 1985	Towle (Budget) to Ascher requesting funding information.
July 3, 1985	Fisher to the Operating Departments commenting on the need to have a specific list of the items of work required to make the line operational and asking for the names of representatives from each department who will be responsible for the development of the list. The required work will be included in the future wrap-up contract.
July 5, 1985	Fischer to Rosenfeld giving cash flow requirement to complete the 63rd Street Line.
July 5, 1985	Fisher to Rosenfeld recommending the work that should continue in the event the Authority decides to suspend a portion of the work for 3 to 6 months. Also provides estimates of the additional costs which would result from a suspension and an estimate of the cash flow with no suspension.
July 5, 1985	Fisher to Rosenfeld informing of his discussions with P. Samuels of the IG office re. testing of concrete.
July 8, 1985	Mombach to to Feeley giving quota positions for the New Routes.
July 9, 1985	Oberter to Adler requesting the preparation of a contract with CTL.
July 10, 1985	Blumberg's memo on the use of 3M for sealing leaks.
July 10, 1985	Meberg to Gabel identifying personnel of the Ad-hoc Design Group.
July 12, 1985	Blumberg's memo giving a chronology of discussions between TA and CTL.
July 19, 1985	MTA Board approved a Recommendation to Award a sole source consultant contract to Construction Technology Laboratories (CTL) for an independent evaluation of the structural integrity and water problems on the 63rd St. Line. (It was on the TA Committee Agenda on July 17, 1985.)
July 24, 1985	Fisher to Rosenfeld listing monthly costs for the 63rd St. Line contracts from July through October, 1985 as requested by E. Towle on July 3, 1985.
July 24, 1985	Morcone (City Comptroller's Office) to Ascher requesting that a field inspection of the 63rd Street Line be arranged for eight engineers of his staff.
July 24, 1985	Stanford to Gabel giving results of the T.R.A.P. Task Force survey of the Archer Avenue Line.

July 26, 1985	Benson (UMTA) to Nasti (UMTA) - Interim report on quality of construction at NYCTA.
July 29, 1985	Stanley to Kiley suspending federal funding for the 63rd Street Line.
August 1, 1985	Nasti to Kiley concerning the OIG Interim Audit on Quality of NYCTA New Routes Construction.
August 2, 1985	Stanford to Gabel giving results of the T.R.A.P. Task Force survey of the 63rd Street Line and 2nd Avenue Line.
August 5, 1985	Sterman to Ascher requesting copies of all CTL reports.
August 8, 1985	Manes to Kiley requesting a briefing on the 63rd Street and Archer Avenue Lines.
August 9, 1985	Merola (District Attorney) to E. Meese (Attorney General) requesting to institute investigations to examine possible frauds committed on the 63rd Street project.
August 9, 1985	Manes to Gunn urging him to complete construction of the 63rd Street and Archer Avenue Lines.
August 16, 1985	Letter from Senators Andrews and D'Amato requesting documentation in conjunction with the Subcommittee's on Transportation scheduled hearing in mid-October to review how Federal Funds were expended on the New Routes.
August 16, 1985	Preliminary Report prepared by the CTL on their evaluation of the 63rd Street Tunnel.
August 21, 1985	TA Committee agenda item - three options concerning construction of the work on the 63rd St. Line were presented. 1. Continuation of the work except for items of work that may have to be removed at a later date. 2. Partial suspension of the work 3. Full suspension of the work
August 23, 1985	MTA Board approves Option I (Continuation of the Work) concerning the 63rd St. Line.
August 23, 1985	MTA approved a Supplemental Agreement with CTL providing for an evaluation of the structural integrity and water problems on the Archer Avenue Line and the completed sections of the Second Avenue Line. (This item was on the TA Committee agenda on August 21, 1985.)
August 27, 1985	Ascher to Mombach requesting current status of cathodic protection work for the 63rd Street tunnel.

I. LISTING OF THE NEW ROUTES REPORTS

Report Title	Prepared by	Date
RT Connections to the 63rd St. Tunnel	Coverdale & Colpitts	Jan. 25, 1968
57-B (Utica Ave.) Phase I	Eng. Department	Nov. 1969
131-A (63rd St. Line)	Eng. Department	Undated
131/133 - S.E. Queens	Eng. Department	May, 1970
131-A (Second Ave.) Phase I	DeLeuw, Cather	Sept., 1972
132-B (Second Ave.-Bronx) Phase I	Sverdrup & Parcel	Nov., 1972
131-D/133 - S.E. Queens	SKN&H	Dec., 29, 1972
People Mover Systems-Mid & Lower Manh.	Kaiser Engineers	Jan., 31, 1973
RT. 131-C (L.I.Exp.) Phase I	P.B. - G.H	Jan., 1973
RT. 132-C (Second Ave.-Lower Manh) Phase I	DeLeuw, Cather	March, 1973
RT. 132-C	City Planning	March, 1973
131-B (Second Ave. - Bronx) Phase I	Sverdrup & Parcel	Sept., 1973
132 -B (Supplement to Phase I)	Sverdrup & Parcel	Sept., 1973
131-B (Remod) - Super Express	P.B - G.H.	July, 1975
131-A TBM Study	PBQ&D	Oct., 1975
Bronx Extensions	Eng. Dept.	Oct., 1977

II. MONTHLY STATUS REPORTS

A series of monthly reports prepared by O'Brien-Kreitzberg & Assoc., a CPM Coordinator for the New Routes (from February, 1982 through August, 1985). The reports provide status of the 63rd Street and Archer Avenue Lines, including the following:

a) Critical action items and problem areas.
b) Estimated completion date of each section.
c) Minutes of a prior monthly meeting with TA personnel.

III. COMPUTER LISTING OF NEW ROUTES CONTRACTS

A summary listing of all contracts including costs, advertising dates, bid dates, award dates and completion dates.

CONCLUSION OF HEARING

Senator D'AMATO. That concludes the hearing. The subcommittee will recess and reconvene at the call of the Chair.

[Whereupon, at 2:15 p.m. Saturday, November 2, the hearing was concluded and the subcommittee was recessed to reconvene at the call of the Chair.]

MATERIAL SUBMITTED SUBSEQUENT TO CONCLUSION OF HEARING

[CLERK'S NOTE: The following materials were submitted by witnesses subsequent to the hearing of November 2.]

LETTER FROM EDWARD V. REGAN, NEW YORK STATE COMPTROLLER

November 26, 1985

Honorable Alfonse M. D'Amato
United States Senator
United States Senate
Washington, D.C. 20510

Dear Senator D'Amato:

Thank you for the opportunity to testify before you and the Subcommittee on Transportation and Related Agencies of the Senate Committee on Appropriations on November 2nd. I appreciate your kind words regarding my testimony and participation at the hearing. I also appreciate the opportunity to comment on your draft legislation regarding improvements in federal oversight of project management on major transit capital projects.

The hearing you held was valuable in focusing on, and evaluating, the problems of the Metropolitan Transportation Authority (MTA) and the 63rd Street Tunnel project. We share a common concern that the management of capital transit projects must be improved. I have frequently expressed my apprehension about the inability of the New York City Transit Authority to develop, supervise and control large capital programs.

My most recent audit of the New York City Transit Authority capital program documented that the Transit Authority did not have a uniform method of estimating project costs, did not use standard price lists, used the wrong inflation factor and failed to utilize economies of scale in cost computations. Section 23(c)(2) of the bill you have proposed would force the Transit Authority to address these problems, and to take meaningful steps to rectify them as a condition for receiving federal grants. Another example of a problem identified by my most recent audit of the capital program, which would be dealt with by your proposed legislation, was the lack of qualified engineering personnel. Section 23(c)(1) would require that job descriptions and job qualifications be clearly stated in a management plan. In addition, a required document control procedure and record-keeping system as outlined in Section 23(c)(4) of your proposal would address the problems identified in my audit of the Transit Authority's management information system, which has an 8,000 work-hour backlog of user assistance requests which would take more than two years to eliminate.

I commend your initiative and foresight in bringing public attention to the need to develop appropriate methods to monitor and control the implementation of federally-funded capital projects. I share your hope that implementation of the legislation will result in the rapid and effective improvement of Transit Authority capital programs.

Again, I appreciate the opportunity to testify at the Subcommittee's hearing, and to comment on your legislative proposal.

Sincerely,

Comptroller

Letter From Joseph P. Welsch, Inspector General, U.S. Department of Transportation

NOV 26 1985

The Honorable Alfonse M. D'Amato
United States Senate
Washington, D.C. 20510

Dear Senator D'Amato:

This is in response to your November 7, 1985 letter addressing various issues discussed at the recent congressional hearings on the 63rd Street Subway Tunnel Project in New York City. I shall address the issues in the order they appeared in your letter.

I have reviewed the draft legislation to require Urban Mass Transportation Administration project management oversight on major capital projects. In my opinion, such legislation is both timely and necessary. It should provide far greater assurance than is now available that major capital projects will be managed efficiently and completed on schedule. This in turn should ensure the proper and effective use of Federal funds.

With respect to the Schiavone Construction Company records of concrete used on the Archer Avenue Project, my staff has contacted Schiavone and has arranged to start a review on November 25, 1985. We will advise you of the results of this review as soon as it is completed.

Your letter also contained three specific questions relating to our audit efforts at the Metropolitan Transportation Administration and the New York City Transit Authority. The responses to those questions, copy enclosed, were provided under separate cover to the Senate Appropriations Committee, Subcommittee on Transportation and Related Agencies.

If you need any further information, please contact me.

Sincerely,

Joseph P. Welsch

LETTER FROM SANFORD E. RUSSELL, NEW YORK STATE INSPECTOR GENERAL

December 30, 1985

Honorable Senator Alfonse D'Amato
1 Penn Plaza
Suite 1635 - 16th Floor
New York, New York

Dear Senator D'Amato:

In response to your request, I have enclosed my answers to the written questions submitted by your staff on the NYCTA 63rd Street Tunnel project. This should complete the record for my portion of the testimony of November 2, 1985.

I have also reviewed the proposed legislation you have forwarded to me which seeks an amendment to the Urban Mass Transportation Act of 1964, to require project management of federally funded Capital projects. As you know, in my office's reviews of the MTA Capital Programs, we have consistently found a lack of adequate staff organization and project management. Clearly, in order to protect the public dollar, and to ensure that needed improvements are made in the metropolitan transit system, effective project management must be instituted. The Office of the Inspector General supports efforts such as yours to address this continuing problem.

I wish to take this opportunity to thank you again for inviting me to testify before your committee and ask that you feel free to contact me if I can be of any further assistance.

Sincerely,

Letter From William H. Webster, Director, Federal Bureau of Investigation

January 2, 1986

Honorable Alfonse D'Amato
United States Senate
Washington, D.C.

Dear Senator D'Amato:

Thank you for your November 7, 1985 letter commending Special Agent (SA) Frank DeRonja for his testimony at your Senate Appropriations Committee hearing on November 2. Your letter has been brought to SA DeRonja's attention.

With regard to the Construction Technology Laboratory (CTL) report, SA DeRonja has no additional comment. The CTL report is a broad and comprehensive study, the scope of which goes beyond SA DeRonja's area of technical expertise. Further, SA DeRonja has already provided testimony based on his on-site examination of the modified Girder G-4. Additional comment by SA DeRonja based on his review of an evaluation reported by another testing facility would not differ from the technical opinions he has already expressed.

Once again, thank you for recognizing SA DeRonja's contribution at your hearing.

Sincerely yours,

William H. Webster
Director

LETTER FROM ROBERT R. KILEY, CHAIRMAN OF THE BOARD, METROPOLITAN TRANSPORTATION AUTHORITY

December 3, 1985

Hon. Alfonse D'Amato
United States Senate
520 Senate Hart Office Building
Washington, DC 20510

Dear Senator D'Amato:

Thank you for offering me this opportunity to provide further information on the 63rd Street tunnel and on the MTA's Capital Plan as well as to comment upon your proposed legislation regarding project management for federally funded capital projects. I also appreciate your offer of continued support in Washington as we go forward in tackling the tough challenges still ahead, including the need to obtain adequate funds to continue MTA's effort to restore New York's mass transit system to a state of good repair.

I have reviewed the draft bill and find that it contains provisions which are basic and necessary to a good project management plan. These include minimum requirements for controlling a project's costs and schedule while still assuring that a quality product is obtained. The bill also contains reporting requirements to keep management current on a project's status and in a position to provide corrective input if necessary. I am encouraged to see that this bill appears to follow the provisions of the project management plan recently completed by the Transit Authority and presently being introduced on its engineering and construction projects. If the Secretary, in her discretion, were to require a project management plan in accordance with Section 23(b) & (c), the Transit Authority would be able to respond in an appropriate and constructive manner.

I would like to make a general comment regarding the proposed legislation as well as one specific recommendation. Adding another layer of oversight, as contemplated by Section 23(a) of the bill, does not, in and of itself, assure the quality of a project, particularly one that already has the benefit of oversight by federal, state and local government agencies. In some cases, the introduction of another layer of oversight might only distract senior personnel from executing the management functions that are appropriately theirs and for which they are held accountable. The most efficient and productive way of achieving desired levels of quality is by "building" quality into the product through procedures and supervision. This is how federal dollars can be best spent and this is certainly our goal at MTA.

I also have one specific recommendation to make. You may want to consider establishing a specific dollar amount to serve as a limit or floor to delineate which projects are subject to the legislation and which are not. For example, projects with a cost exceeding $50 million would be subject to the bill's provisions; those costing less than $50 million would not. With the large number of federally funded capital projects (several hundred at the MTA alone), setting such a limit, in my opinion, would make the implementation of the bill more manageable both for UMTA and its grantees.

Thank you again for the opportunity of providing additional comment. You will find attached my answers to the questions you posed. Please contact me if I can be of further assistance.

Sincerely,

Bob Kiley
Robert R. Kiley
Chairman

LETTER FROM THEODORE W. GEISER, ATTORNEY AT LAW, ON BEHALF OF THE SCHIAVONE CONSTRUCTION CO.

November 26, 1985

Alfonse M. D'Amato
United States Senator
United States Senate
Washington, DC 20510

Re: MTA

Dear Senator D'Amato:

Herewith, as promised, a detailed report of the history of the G-4 Girder. It is a melancholy fact that my client has become a punching bag for politicians, aided and abetted by the media.

The objectivity demonstrated by your office and your staff is like a breath of fresh air.

Sincerely,

THEODORE W. GEISER

G-4 GIRDER

On October 21, 1981, Tom Bach, project engineer for the Section 5B prime contractor Schiavone/Impregilo/Crimmins, went to the NYCTA project engineer, Robert Schriever, to ask about the dimensions for the encasement to be used around Girder G4 on the west side of the FDR shaft. There had been, what Bach characterized as, an internal dispute among TA field personnel as to the configuration of the encasement on the east side of the FDR shaft. The same configuration could not be used on the west side because of a higher arch and lower beam.

Schriever, in Bach's presence, reviewed the contract drawings but found no specific dimensions for concrete curvature or encasement. He then took the top of girder elevation and subtracted the depth of girder to provide him with the elevation of bottom of girder. He next subtracted the base of rail elevation, (taken from a TA base-of-rail book for that station), and realized that the train clearance would only be 12'-3" rather than the 13'-2" normally required. Schriever had his assistant, Sarabhai (Sy) Patel, check his computations and he verified that there was an error on the contract drawings.

Schriever acknowledged that S/I/C had submitted shop drawings for their work, had fabricated everything according to the approved shop drawings, (which were identical to the contract drawings), and that the error was 100% on the part of the TA; therefore, the corrective work would have to be paid to the Contractor by the TA.

On October 23, 1981, Gennaro Liguori, a Second Vice President of Schiavone and Project Manager for S/I/C addressed a letter to George Ziegler, Chief Engineer, NYCTA - Attention: Mr. John Tremko, Division Engineer, confirming the need for the modification of the beam in the FDR shaft, stating for the record that the Joint Venture would seek additional costs and an extension of time for the required corrective work, and advising that a prompt resolution was imperative to maintain the construction schedule. At the time that the error was discovered all of the shaft steel had been erected and the concrete encasement work was progressing toward the G4 girder.

The following information is taken from the transcripts of the TA Fact Finding Hearing in March of 1984:

> Schriever contacted Richard Mitchell - TA Administrative Engineer, who as senior project design engineer was the squad leader in charge of design and had been involved in the design of Section 5B from its inception. Mitchell investigated and found that there had, in fact, been an error made and that it had to be rectified.
>
> The Subdivision engineer, Norman Kowalsky, also contacted Mitchell because he had been the squad leader who had designed the project and was the most knowledgeable. It had been agreed that Mitchell would continue to handle shop drawings and field problems during the construction phase.
>
> Mitchell visited the jobsite and discussions took place with Schriever about what options were open to them for corrective action. It was agreed that promptness was necessary because of concern for on-time completion of the FDR shaft and since the continuing progress was important to both TA and S/I/C.
>
> Schriever and Mitchell reviewed the option of removing the G4 girder, raising it by means of column additions. Since the columns had already been partially encased and all work in the area would have to be stopped in order to dismantle the steel, this option was abandoned and it

was agreed that in-place corrections to the girder was the best way to proceed.

Mitchell determined that the present girder could be shortened (cut away in the area of the encroachment) with flange plates added and since there was room above and the concrete had not yet been poured, the opportunity existed to install a reinforced concrete beam to make up for the deficiency in the shortened steel girder. Because there was the condition of field welding, it was determined not to utilize the new welded flanges in the design, but only to evaluate the strength of the remaining tee-section (after cutting away the original lower flange) and then to design the concrete beam to carry the majority of the load coming on the wall. Whatever value the new flanges had would provide an added safety factor. There was more than sufficient strength between the cut away steel tee-section and the newly developed reinforced concrete beam to carry the loads imposed with adequate safety factor.

Mitchell prepared the drawing of October 26, 1981 which was signed by him as Sr. Project Design Engineer, as well as by the Project Design Engineer, the checker, and the draftsman. The drawing was entitled "Route 131A Section 5B, Field Sketch, FDR Shaft (West Wall)".

The field sketch was picked up by Schriever, marked "received" by the section office of the Construction division on October 27, 1981, and delivered to S/I/C and also marked "received" the same day, October 27, 1981.

Mitchell made two trips to the field to examine the work: when the girder was being cut and welded and when the reinforcing bars were being placed. He had many discussions with his field forces to make sure the work was going according to the field sketch he had prepared.

He had no discussions with the contractor as far as any options, but had "told Tom Bach what had to be and no changes".

TA inspectors were present during the construction operations with Angelo Ditucci, TA Asst. Civil Engineer, indicating that he made daily reports of construction activities and that he checked dimensions of formwork, handled concrete including making reports and test cylinders, checked waterproofing, inspected structural steel work. His reports were given daily to the Project Engineer or his assistant.

On October 28, 1981, Schriever formally transmitted the field sketch to S/I/C with the reference: FDR Drive shaft beam modification for the train clearance. The letter of transmittal was marked "received" by S/I/C on October 29, 1981.

Schriever asked Bach to prepare a lump sum price to cover the corrective work but Bach indicated that there were too many unknowns to be able to do that: the work would have to be done 60 feet in the air on scaffolding with difficult handling conditions and unknown production rates; the welding would be done with underground conditions and subsequently inspected by magnafluxing; there were contingencies of delay and interruption to other work; and the work was, in general, considered to be high risk. Schriever and Bach agreed that the work could be done on a time and material basis with records of expenditure maintained. Bach reported back to Liguori (S/I/C-VP) that there was a resolution of the clearance problem, that the corrective work did not involve removal of any previously installed structural steel, that the proposed in-place corrective work and delay and disruption to ongoing work would appear to be relatively minor and that payment would be made for the extra work. Schriever also spoke to Liguori who indicated a willingness to do whatever was necessary to facilitate the work being done so as to preclude either a job shutdown or delay. His only concern was that he be paid for whatever extra work was required to be done. Ultimately, payment was made by issuing a formal change order outlining the basis and cost for the change.

The field sketch included details as to the corrective work as follows:

- dimensions for the removal of portions of the web and lower flange of the G4 girder.
- details of the placement of a new flange made up of the full flanges of a W14x342 welded on each side of the cut section of the existing web.
- details of the weld to be used to fasten the new flanges, which required the use of a BTC-P4, single-bevel-groove-weld which is a designation of the American Welding Society for Partial joint penetration prequalified shielded metal arc welded joints as contained in their Structural Welding Code.
- details of cutting existing stiffeners and rewelding to the new flanges.
- details of installation of 7/8" diameter X 8" long Nelson shear studs, three to a row at 12" centers on each side of the A5 column, as well as on the top flange of the G4 girder.

- details of the installation of an additional four rows of 6 - #10 reinforcing rods (1-1/4" diameter), 12 each on the top and bottom of the newly formed concrete beam, running continuously together with #4 (1/2" diameter) stirrups at 12" centers to wrap the beam.

The work was begun on November 24, 1981 and completed by January 6, 1982. The structural steel work was performed by Ermco Erectors between December 2 and 29, 1981. (Ermco was a subcontractor to the S/I/C joint venture for erection of structural steel.)

Time and material reports were prepared by TA inspectors on a daily basis showing the names of workers, the hours worked, and a description of the work item. A record was also maintained of the equipment utilized and the materials expended and/or incorporated in the work.

Welding of the new flange plates was performed by NYC certified welders on the payroll of Ermco Erectors. TA inspectors recorded both the welders' names and their certification numbers (a normal TA procedure for any welding performed on permanent structures as opposed to temporary structures).

The structural steel welds joining the new flanges to the existing web of the G4 girder were inspected by the magnetic particle method by an outside service, Magnaflux Quality Services, on December 24, 1981. The report which followed stated that "No indications were found on 'I' Beam weld at time of magnetic particles inspection".

The cost summary of the work reflects costs in excess of $31,000 for S/I/C subcontractor, Ermco, and costs for the S/I/C joint venture in excess of $14,000.

LETTER FROM THEODORE W. GEISER, ATTORNEY AT LAW, ON BEHALF OF THE SCHIAVONE CONSTRUCTION CO.

November 21, 1985

Alfonse M. D'Amato
United States Senator
United States Senate
Washington, DC 20510

Re: MTA

Dear Senator D'Amato:

Thank you for your letter of November 6, 1985. Where reference to concrete quantities and records with respect thereto on the Archer Avenue subway project you will be interested to know that immediately after your hearing Schiavone Construction Co. was asked for the first time by the Transit Authority whether it would provide copies of its records. We had no objection to this but the Transit Authority was told that there are some 6,000 pages of documents which the Transit Authority is free to copy at its own expense.

In accordance with my discussions with Ms. Miano I enclose herewith a typical set of documents. We selected the date of March 4, 1981 at random and put together a full set of Company records together with a cover memorandum describing the attached records to facilitate tracking. If your staff requires any further assistance in understanding the documents, they should not hesitate to call.

Meanwhile, no doubt pursuant to your request, I did receive a telephone call from a representative of the Inspector General of the U.S. Department of Transportation and I put him directly in touch with my client to facilitate his understanding and review. It is indeed fortunate that the Company has retained detailed records since they may not exist elsewhere. With reference to the Girder G-4, within the next day or so I will submit our narrative report on this subject.

Once again I express my appreciation of the courtesy and cooperation which we have had from your good people.

Respectfully,

THEODORE W. GEISER

FIELD RECORDS

1. Summary of concrete poured March 1981 by type, station location, and volume.

2. a & b
Daily concrete quantity summary sheet March 1981 listing dates, volume of daily total, volume in each category by description, and cost code; for example:

Date: 3-4-81
Daily Total: 95 C.Y. made up of:

Waterproof Protection	# 5621	11 C.Y.
Storm Sewer	# 5159	30 C.Y.
MH (Manhole)	# 5027	2 C.Y.
Ventilator Slab	# 5577	52 C.Y.

3. Daily concrete report for Job #299 March 4, 1981 showing:

Item No.: such as 5621
Description: such as Waterproof protection
Location: such as Protection Air Flue Southside 83+10 to 83+65 Protection Roof
Quantity: 11 C.Y.

Note: for Item Nos. 5159 and 5027 the additional designation is also shown for 5000 psi and 3500 psi concrete, (all other being 3000 psi).

4. Concrete for March 4, 1981 prepared the day before each pour to notify the plant for the following day; for example, Ernie called at 4:15, talked to Vic to order concrete - approximately 99 C.Y. for delivery commencing 8:00 a.m.

5. Ferrara Bros. - customer copy of ready mixed concrete deliveries on 3/4/81 to Schiavone at Archer Ave. and 152nd St., on Contract C-299, Loaded and del. by: F, 13 C.Y. on the first load and 15 C.Y. on the second for cumulative yardage equalling 28 C.Y., 3000 psi concrete, 576 lbs. of Type I or II (Code 001) cement, 2140 lbs. of 3/4" (Code 011) aggregate, 1280 lbs. of sand, 4.6 oz. of air entrainment (Code 100), hot water used (Code 110), truck nos. 13 and 17, driven by Tony and T.M., arriving 12:20 p.m. and 1:50 p.m., leaving 1:10 p.m. and 2:30 p.m., Ferrara Bros. ticket nos. 12049 and 12055, initialled as having been received by a Schiavone employee.

6. Same general information as (5.) above showing a total of 4 loads or 56 C.Y. of 3000 psi concrete.

7. Same general information as (5.) above, showing on ticket 12037 a different mix for 13 C.Y. of 3500 psi concrete and on ticket 12040 the first of two loads, (the second being on page (8.) of special mix for 5000 psi concrete.

8. As above.

ACCOUNTS PAYABLE REPORTS

1. a & b
Ferrara Bros. statement for March 31, 1981, showing summary of concrete for each date during March; for example:

3/4, 26 C.Y. of Ferrara Code Concrete All, with 3/4" aggregate and 755 pounds of cement for a total of $1,615.31; it also shows 56 C.Y. of 576 lb. of cement concrete and 13 C.Y. of 611# concrete and the charge at $3/C.Y. for the total 95 C.Y. for the hot water added at the plant, designated as winter concrete.

2. Recap of concrete charges to the various cost codes for March 1981.

3 - 9.

Ferrara Bros. invoices which are duplicates of the customer copies (previously identified as field reports) to which have been added the unit prices and extensions for cement, aggregate, hot water, trucking; and the total for the ticket is shown. These totals agree with the totals shown on the statement for March 4th.

Field Records

Concrete for C-394 March 81

Type	Station location	Volume
Mezz Invert Slab	77+85 to 78+20	67 c.y.
Flat Slab Mezz level 158th St	77+90 to 78+00	6 c.y.
Escalator Slope 158th St Mezz	78+20 to 78	39 c.y.
Straight Wall Southside	77+85 to 78+20	86 c.y.
Invert Mezz Level Southside 158th St.	78+50 to 78+75	90 c.y.
Straight Wall Southside	77+70 to 78+25	38 c.y.
Straight Wall Southside	77+60 to 78+20	87 c.y.
Straight Wall "	78+50 to 78+75	69 c.y.
Straight Wall "	N to S 78+75	4 c.y.
Straight Wall "	78+15 to 78+40	25 c.y.
Straight Wall "	78+50 to 78+80	30 c.y.
Straight Wall "	78+50 to 78+75	15 c.y.
Straight Wall "	N to S 78+75	5 c.y.
		561 c.y.

[illegible] SUMMARY SHEET

[illegible] OF March 1981

	[illegible]	[illegible]	5257	[illegible]	[illegible]	5401	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3-2-81	N.C.										
3-3-81	N.C.										
→ 3-4-81	95 c.y.			11 c.y.							
3-5-81	75 c.y.			5 c.y.							
3-6-81	N.C.										
3-9-81	71 c.y.			1 c.y.	67 c.y.						
3-10-81	15 c.y.			12 c.y.			✓			6 c.y.	
3-11-81	45 c.y.										
3-11-81	26 c.y.										
3-13-81	147 c.y.			18 c.y.			86 c.y.				
3-16-81	10 c.y.			7 c.y.							
3-17-81	101 c.y.				90 c.y.						
3-18-81	50 c.y.	10 c.y.		9 c.y.							
3-19-81	N.C.										
3-20-81	86 c.y.	11 c.y.			10 c.y.		54 c.y.				
3-23-81	15 c.y.	2 c.y.		7 c.y.							
3-24-81	89 c.y.			2 c.y.			87 c.y.				
3-25-81	112 c.y.			15.5 c.y.			88 c.y.				5 c.y.
3-27-81	30 c.y.						30 c.y.				
Total 3-2-81 to 3-27-81	967 c.y.	23 c.y.		87.5	167 c.y.		345 c.y.			6	5 c.y.
3-30-81	N.C.										
3-31-81	35			9 c.y.	1 c.y.		20 c.y.				
Total 3-2-81 to 3-31-81	1002	23		96.5	168		365 c.y.			6 c.y.	5 c.y.
3-26-81	55			20			31				
Total 3-2-81 to 3-31-81	1057	23		116.5	168		396 c.y.			6	5

EET

[illegible] 5401	[illegible] 5710	[illegible] 5423	[illegible] 5434	[illegible] 5445	Roof 5456	In Eq 5467	Storm Sewer 5159	[illegible] 5510	M.H. 5027	[illegible] 5514	[illegible] 5566	[illegible] 5577
							30 c.y		2 c.y			52 c.y
											70 c.y	
									3 c.y			
											3 c.y	
				6 c.y							39 c.y	
	86 c.y						14 c.y		12 c.y			
							14 c.y		6 c.y		23 c.y	
									3 c.y			
							3 c.y		8 c.y			
							22 c.y		9 c.y			
	54 c.y								11 c.y			
									6 c.y			
	87 c.y											
	88 c.y				5 c.y				3.5 c.y			
	30 c.y											
	345 c.y			6	5 c.y		83 c.y		63.5		135	52
	20 c.y								5			
	365 c.y			6 c.y	5 c.y		83 c.y		68.5		135	52
	31								4			
	396 c.y			6	5		83 c.y		72.5		135	52

DAILY CONCRETE REPORT: Date: March 4, 1981

ITEM No.	DESCRIPTION	LOCATION	QUANTITY
5346	MUD SLAB & DRAIN DUCTS BELOW MUD SLABS		
5357	Concrete in Sandwalls		
5621	WATERPROOF Protection	Protection Air Flue Southside 83+10 to 83+65 Protection Roof	11 c.y.
5390	Invert Slab		
5401	Sidewall Arches		
5412	Sidewall Straight w/ F.P.		
5423	Sidewalls Flat ⊐⊓⊏		
5434	Internal Walls		
5445	Flat Roof Slab		
5456	Arched Roof		
5467	Flat Arches in Roof		
5489	Duct Benches, Walk benches, Supporting Walls		
5500	Toebenches		
5522	Walls under Platform & Col. Below Plt.		
5544	Platforms		
5566	Stairs & Escalators		
5577	Ventilator Slabs	Vent. Slab 9+9A (Finished) Southside 80+70 to 81+35	52 c.y.
5588	Ventilator Walls		
5599	L.I.R.R. Retaining Wall Ftg.		
5610	L.I.R.R. Walls		
5632	Supports to Pipes & Sewers		
5643	RCC Sewer + Supports		
5159	Storm Sewer Walls & Roof ins.	Walls & Roof Southside 64+73 to 66+75 (5000 psi)	30 c.y.
5077	Manholes	M.H. p Invert 82+75 M.H. n Slab 84+30 (3500)	2 c.y.
			95 c.y.

Concrete for March 4, 1981

Ventilator Slabs 9+9A Southside 80+70 to 81+25 (3000psi) 50 c.y.

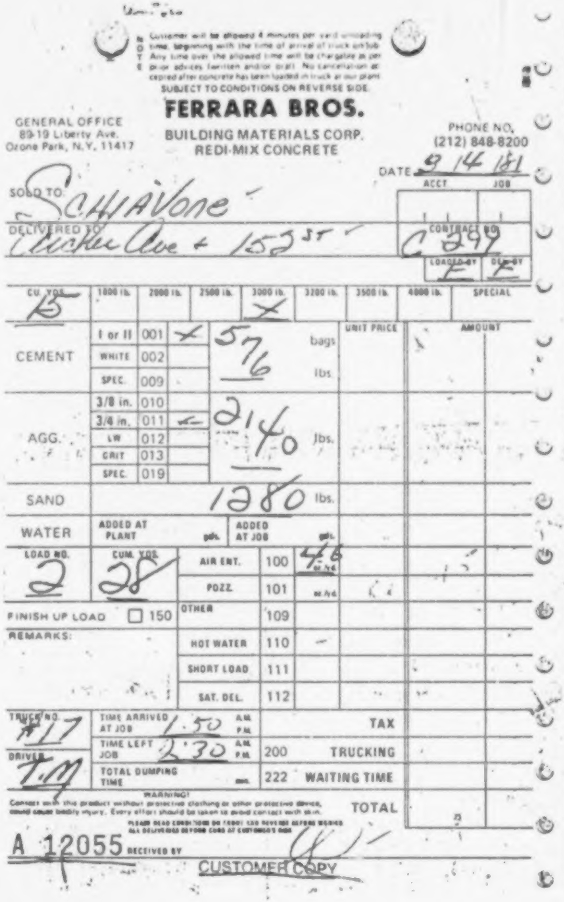
Protection Air Flue Southside 83+10 to 83+65 (3600psi) 11 c.y.

Storm Sewer Walls & Roof Slab Southside 76+43 to 76+95 ~~36~~ 30 c.y
(5000psi)

97 c.y.

8:00
4:15

M.H p 82+80 M.H. Invert for pipe 1 c.y.
1 c.y.



NOTE: Customer will be allowed 4 minutes per yard unloading time, beginning with the time of arrival of truck on job. Any time over the allowed time will be chargeable as per prior advices (written and/or oral). No cancellation accepted after concrete has been loaded in truck at our plant.

SUBJECT TO CONDITIONS ON REVERSE SIDE

FERRARA BROS.

BUILDING MATERIALS CORP.
REDI-MIX CONCRETE

GENERAL OFFICE
89-19 Liberty Ave.
Ozone Park, N.Y. 11417

PHONE NO.
(212) 848-8200

DATE 9/14/81

SOLD TO Schiavone

DELIVERED TO Eucker Ave + 152 ST

ACCT	JOB

CONTRACT NO. C 299

LOADED BY F — DEL. BY F

CU. YDS.	1800 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3500 lb.	4000 lb.	SPECIAL
15				X				

					UNIT PRICE	AMOUNT
CEMENT	I or II	001	X	576 bags / lbs.		
	WHITE	002				
	SPEC.	009				
AGG.	3/8 in.	010				
	3/4 in.	011	✓	2140 lbs.		
	LW	012				
	GRIT	013				
	SPEC.	019				
SAND				1280 lbs.		
WATER	ADDED AT PLANT gals.		ADDED AT JOB gals.			

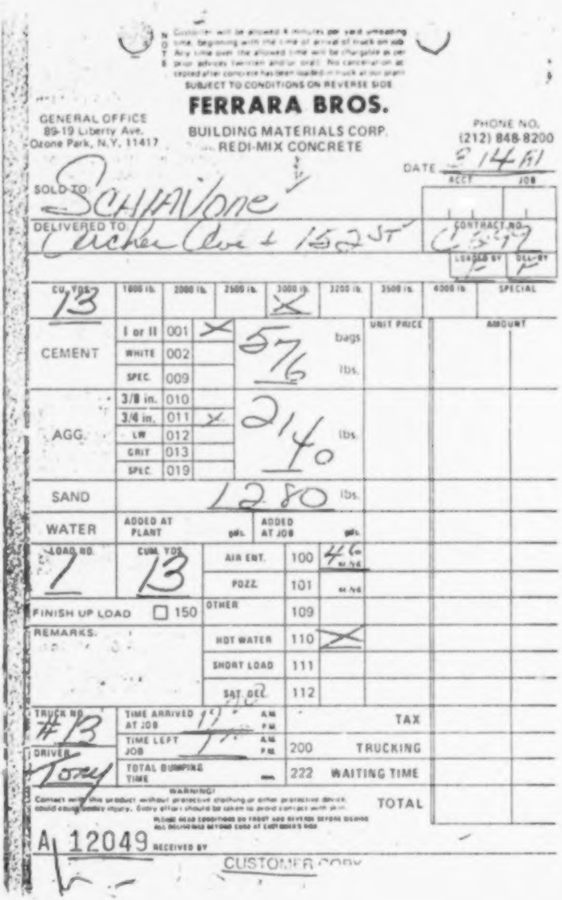
LOAD NO.	CUM. YDS.				
2	28	AIR ENT.	100	4-6	
		POZZ.	101		
FINISH UP LOAD ☐ 150		OTHER	109		
REMARKS:		HOT WATER	110		
		SHORT LOAD	111		
		SAT. DEL.	112		

TRUCK NO. #17	TIME ARRIVED AT JOB 1.50 AM/PM		TAX	
DRIVER T.M	TIME LEFT JOB 2.30 AM/PM	200	TRUCKING	
	TOTAL DUMPING TIME min.	222	WAITING TIME	
			TOTAL	

WARNING!
Contact with this product without protective clothing or other protective device, could cause bodily injury. Every effort should be taken to avoid contact with skin.

A 12055 RECEIVED BY

CUSTOMER COPY



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SUBJECT TO CONDITIONS ON REVERSE SIDE

FERRARA BROS.

BUILDING MATERIALS CORP.
REDI-MIX CONCRETE

GENERAL OFFICE
89-19 Liberty Ave.
Ozone Park, N.Y. 11417

PHONE NO.
(212) 848-8200

DATE 9/14/81

SOLD TO Schiavone

DELIVERED TO Eucker Ave + 152 ST

ACCT	JOB

CONTRACT NO. C 297

LOADED BY F — DEL. BY F

CU. YDS.	1800 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3500 lb.	4000 lb.	SPECIAL
13				X				

					UNIT PRICE	AMOUNT
CEMENT	I or II	001	X	576 bags / lbs.		
	WHITE	002				
	SPEC.	009				
AGG.	3/8 in.	010				
	3/4 in.	011	✓	2140 lbs.		
	LW	012				
	GRIT	013				
	SPEC.	019				
SAND				1280 lbs.		
WATER	ADDED AT PLANT gals.		ADDED AT JOB gals.			

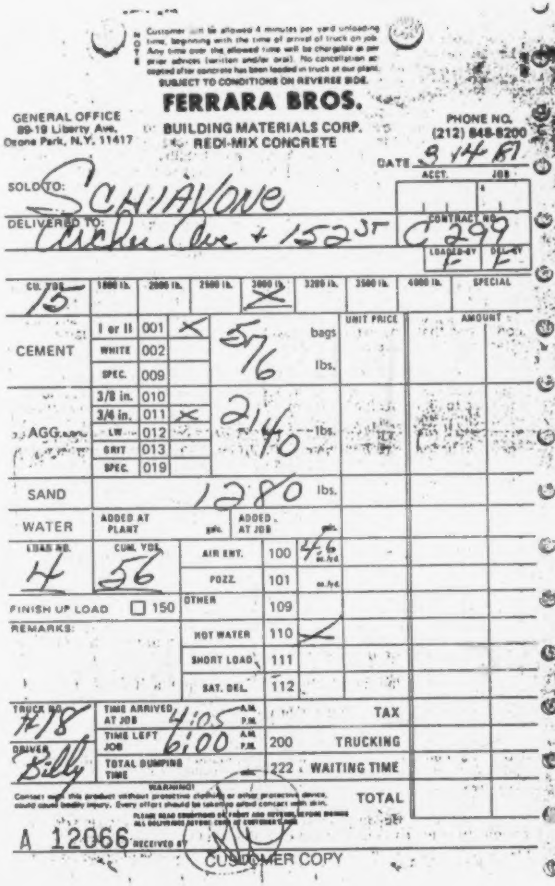
LOAD NO.	CUM. YDS.				
1	13	AIR ENT.	100	4-6	
		POZZ.	101		
FINISH UP LOAD ☐ 150		OTHER	109		
REMARKS:		HOT WATER	110	X	
		SHORT LOAD	111		
		SAT. DEL.	112		

TRUCK NO. #13	TIME ARRIVED AT JOB 12 AM/PM		TAX	
DRIVER Tony	TIME LEFT JOB 1 AM/PM	200	TRUCKING	
	TOTAL DUMPING TIME min.	222	WAITING TIME	
			TOTAL	

WARNING!
Contact with this product without protective clothing or other protective device, could cause bodily injury. Every effort should be taken to avoid contact with skin.

A 12049 RECEIVED BY

CUSTOMER COPY



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SUBJECT TO CONDITIONS ON REVERSE SIDE.

FERRARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE

GENERAL OFFICE
89-19 Liberty Ave.
Ozone Park, N.Y. 11417

PHONE NO.
(212) 848-8200

DATE 9 14 81

SOLD TO: SCHIAVONE

DELIVERED TO: Archer Ave + 152ST

CONTRACT NO. C 299

LOADED BY F
DEL. BY F

CU. YDS.	1800 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3500 lb.	4000 lb.	SPECIAL
15				X				

					UNIT PRICE	AMOUNT
CEMENT	I or II	001	X	576 bags lbs.		
	WHITE	002				
	SPEC.	009				
AGG.	3/8 in.	010		2140 lbs.		
	3/4 in.	011	X			
	LW	012				
	GRIT	013				
	SPEC.	019				
SAND				1280 lbs.		
WATER	ADDED AT PLANT gals.		ADDED AT JOB gals.			

LOAD NO.	CUM. YDS.				
4	56	AIR ENT.	100	4.6 oz./yd.	
		POZZ.	101	oz./yd.	
FINISH UP LOAD ☐ 150		OTHER	109		
REMARKS:		HOT WATER	110	X	
		SHORT LOAD	111		
		SAT. DEL.	112		

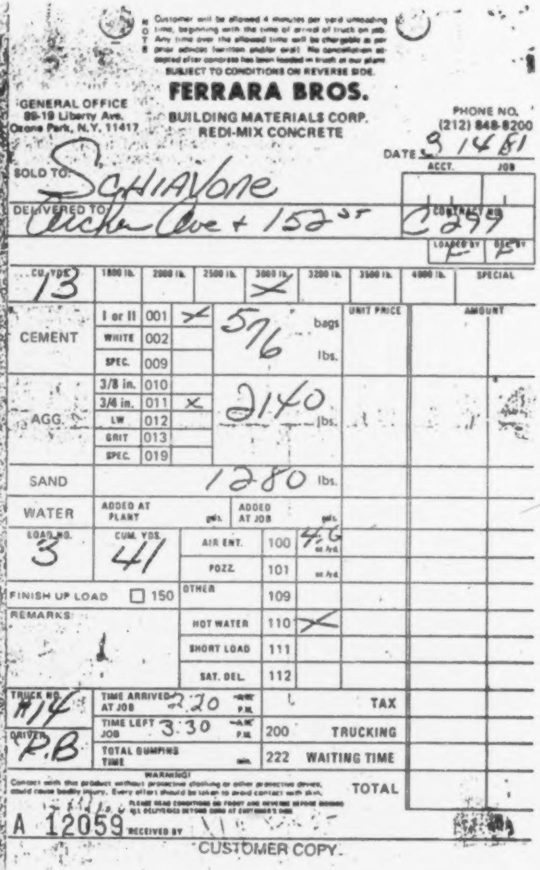
TRUCK NO. #18	TIME ARRIVED AT JOB 4:05 A.M. P.M.		TAX
DRIVER Billy	TIME LEFT JOB 6:00 A.M. P.M.	200	TRUCKING
	TOTAL DUMPING TIME min.	222	WAITING TIME
			TOTAL

WARNING! Contact with this product without protective clothing or other protective device, could cause bodily injury. Every effort should be taken to avoid contact with skin.

PLEASE READ CONDITIONS ON FRONT AND REVERSE BEFORE SIGNING ALL DELIVERIES BEYOND CURB AT CUSTOMER'S RISK

A 12066 RECEIVED BY

CUSTOMER COPY



NOTE: Customer will be allowed 4 minutes per yard unloading time, beginning with the time of arrival of truck on job. Any time over the allowed time will be chargeable at per prior advices (written and/or oral). No cancellation accepted after concrete has been loaded in truck at our plant.

SUBJECT TO CONDITIONS ON REVERSE SIDE.

FERRARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE

GENERAL OFFICE
89-19 Liberty Ave.
Ozone Park, N.Y. 11417

PHONE NO.
(212) 848-8200

DATE 9 14 81

SOLD TO: SCHIAVONE

DELIVERED TO: Archer Ave + 152ST

CONTRACT NO. C 299

LOADED BY F
DEL. BY F

CU. YDS.	1800 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3500 lb.	4000 lb.	SPECIAL
13				X				

					UNIT PRICE	AMOUNT
CEMENT	I or II	001	X	576 bags lbs.		
	WHITE	002				
	SPEC.	009				
AGG.	3/8 in.	010				
	3/4 in.	011	X	2140 lbs.		
	LW	012				
	GRIT	013				
	SPEC.	019				
SAND				1280 lbs.		
WATER	ADDED AT PLANT gals.		ADDED AT JOB gals.			

LOAD NO.	CUM. YDS.				
3	41	AIR ENT.	100	4.6 oz./yd.	
		POZZ.	101	oz./yd.	
FINISH UP LOAD ☐ 150		OTHER	109		
REMARKS:		HOT WATER	110	X	
		SHORT LOAD	111		
		SAT. DEL.	112		

TRUCK NO. #14	TIME ARRIVED AT JOB 2:20 A.M. P.M.		TAX
DRIVER P.B	TIME LEFT JOB 3:30 A.M. P.M.	200	TRUCKING
	TOTAL DUMPING TIME min.	222	WAITING TIME
			TOTAL

WARNING! Contact with this product without protective clothing or other protective device, could cause bodily injury. Every effort should be taken to avoid contact with skin.

PLEASE READ CONDITIONS ON FRONT AND REVERSE BEFORE SIGNING ALL DELIVERIES BEYOND CURB AT CUSTOMER'S RISK

A 12059 RECEIVED BY

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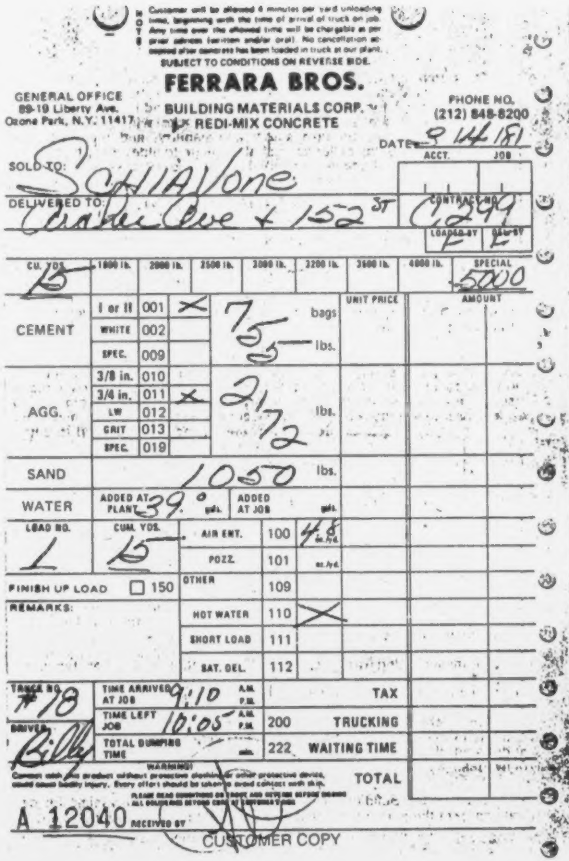


NOTE Customer will be allowed 4 minutes per yard unloading time, beginning with the time of arrival of truck on job. Any time over the allowed time will be chargeable at per prior advice (written and/or oral). No cancellation accepted after concrete has been loaded in truck at our plant.

SUBJECT TO CONDITIONS ON REVERSE SIDE.

FERRARA BROS.

BUILDING MATERIALS CORP.

REDI-MIX CONCRETE

GENERAL OFFICE
89-19 Liberty Ave.
Ozone Park, N.Y. 11417

PHONE NO.
(212) 848-8200

DATE 9/14/81

SOLD TO: SCHIAVone

DELIVERED TO: Archer Ave + 152 ST

ACCT.	JOB	CONTRACT NO.	LOADED BY	DEL. BY
		C299	F	F

CU. YDS.	1800 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3600 lb.	4000 lb.	SPECIAL
15								5000

						UNIT PRICE	AMOUNT
CEMENT	I or II	001	X	7	bags		
	WHITE	002					
	SPEC.	009		55	lbs.		
AGG.	3/8 in.	010					
	3/4 in.	011	X	21			
	LW	012			lbs.		
	GRIT	013		72			
	SPEC.	019					
SAND				1050	lbs.		
WATER	ADDED AT PLANT 39.0 gals.			ADDED AT JOB	gals.		

LOAD NO.	CUM. YDS.					
1	15	AIR ENT.	100	4.8 oz./yd.		
		POZZ.	101	oz./yd.		
FINISH UP LOAD ☐ 150		OTHER	109			
REMARKS:		HOT WATER	110	X		
		SHORT LOAD	111			
		SAT. DEL.	112			

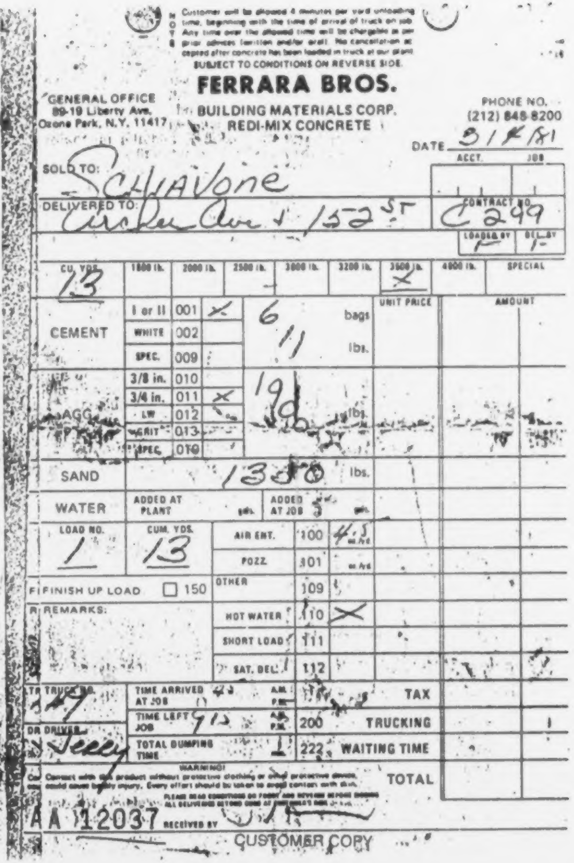
TRUCK NO.				
#18	TIME ARRIVED AT JOB	9:10 A.M. P.M.		TAX
DRIVER Billy	TIME LEFT JOB	10:05 A.M. P.M.	200	TRUCKING
	TOTAL DUMPING TIME	min.	222	WAITING TIME
				TOTAL

WARNING!
Contact with this product without protective clothing or other protective device, could cause bodily injury. Every effort should be taken to avoid contact with skin.

PLEASE READ CONDITIONS ON FRONT AND REVERSE BEFORE SIGNING

A 12040 RECEIVED BY

CUSTOMER COPY



NOTE Customer will be allowed 4 minutes per yard unloading time, beginning with the time of arrival of truck on job. Any time over the allowed time will be chargeable at per prior advice (written and/or oral). No cancellation accepted after concrete has been loaded in truck at our plant.

SUBJECT TO CONDITIONS ON REVERSE SIDE.

FERRARA BROS.

BUILDING MATERIALS CORP.

REDI-MIX CONCRETE

GENERAL OFFICE
89-19 Liberty Ave.
Ozone Park, N.Y. 11417

PHONE NO.
(212) 848-8200

DATE 3/4/81

SOLD TO: SCHIAVone

DELIVERED TO: Archer Ave + 152 ST

ACCT.	JOB	CONTRACT NO.	LOADED BY	DEL. BY
		C299	F	F

CU. YDS.	1800 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3600 lb.	4000 lb.	SPECIAL
13						X		

						UNIT PRICE	AMOUNT
CEMENT	I or II	001	X	6	bags		
	WHITE	002					
	SPEC.	009		11	lbs.		
AGG.	3/8 in.	010					
	3/4 in.	011	X	19			
	LW	012		[illegible]	lbs.		
	GRIT	013					
	SPEC.	019					
SAND				1380	lbs.		
WATER	ADDED AT PLANT gals.			ADDED AT JOB 5	gals.		

LOAD NO.	CUM. YDS.					
1	13	AIR ENT.	100	4.5 oz./yd.		
		POZZ.	101	oz./yd.		
FINISH UP LOAD ☐ 150		OTHER	109			
REMARKS:		HOT WATER	110	X		
		SHORT LOAD	111			
		SAT. DEL.	112			

TRUCK NO.				
#7	TIME ARRIVED AT JOB	[illegible] A.M. P.M.		TAX
DRIVER Jerry	TIME LEFT JOB	9:12 A.M. P.M.	200	TRUCKING
	TOTAL DUMPING TIME	1	222	WAITING TIME
				TOTAL

WARNING!
Contact with this product without protective clothing or other protective device, could cause bodily injury. Every effort should be taken to avoid contact with skin.

PLEASE READ CONDITIONS ON FRONT AND REVERSE BEFORE SIGNING

A 12037 RECEIVED BY

CUSTOMER COPY

Ferrara Bros.
Building Materials Corp.
89-19 LIBERTY AVENUE — OZONE PARK, N. Y. 11417
TEL. 848-8200

Accts Payable

LOCATION	ACCOUNT NO.	STATEMENT DATE
C299	82003	March 31, 1981

Schiavone Construction Corp.
1600 Paterson Plank Road
Secaucus, New Jersey 07094

Attn: Accounts Payable

PREVIOUS BALANCE 117270.48

DATE	QUANTITY	PROD. CODE	DESCRIPTION	AMOUNT
-	Cubic yards			
3/4	26.00	All	3/4" Agg/Cem 755 Lbs.	1615.31
	56.00	All	3/4" Agg/Cem 576	3052.60
	13.00	All	3/4" Agg/Cem 611	728.00
	95.00	110	Winter Concrete (hot water)	285.00
3/5	75.00	All	3/4" Agg/Cem 576	4088.30
	75.00	110	Winter Concrete	225.00
3/9	58.00	All	3/4" Agg/Cem 576	3161.62
	13.00	All	3/4" Agg/Cem 611	728.00
3/10	15.00	All	3/4" Agg/Cem 576	817.66
3/11	45.00	All	3/4" Agg/Cem 576	2452.98
3/12	26.00	All	3/4" Agg/Cem 611	1456.00
3/13	108.00	All	3/4" Agg/Cem 576	5887.16
	39.00	All	3/4" Agg/Cem 611	2184.00
3/16	10.00	All	3/4" Agg/Cem 611	560.00
3/17	78.00	All	3/4 Agg/Cem 576	4251.84
	23.00	All	3/4" Agg/Cem 611	1288.00
	101.00	110	Winter Concrete	303.00
3/18	23.00	All	3/4" Agg/Cem 576	1253.75
	27.00	All	3/4" Agg/Cem 705	1620.00
	50.00	110	Winter Concrete	150.00
3/20	74.00	All	3/4" Agg/Cem 576	4033.80
	12.00	All	3/4" Agg/Cem 611	672.00
	86.00	110	Winter Concrete	258.00
3/23	15.00	All	3/4" Agg/Cem 611	840.00
3/24	89.00	All	3/4" Agg/Cem 576	4851.45
3/25	82.00	All	3/4" Agg/Cem 576	4469.88
	15.00	All	3/4" Agg/Cem 611	840.00
	15.00	All	3/4" Agg/Cem 755	931.91

Ferrara Bros.
Building Materials Corp.
29-19 LIBERTY AVENUE — OZONE PARK, N. Y. 11417

Schiavone Construction Corp.
Continued from Previous Page

LOCATION	ACCOUNT NO.	STATEMENT DATE
C299	82003	March 31, 1981

PREVIOUS BALANCE

DATE	QUANTITY	PROD. CODE	DESCRIPTION	AMOUNT
3/26	43.00	All	3/4" Agg/Cem 576	2343.96
	12.00	All	3/4" Agg/Cem 755	745.53
3/27	30.00	All	3/4" Agg/Cem 576	1635.32
3/31	28.00	All	3/4" Agg/Cem 576	1526.30
	7.00	All	3/4" Agg/Cem 611	392.00

RECEIVED
JOB 299
① ②
APR 9 1981
SCHIAVONE CONST. CO. INC.

T. K.	K. V.
L. R.	H. T.

SCHIAVONE CONST.

VEN	Fer425
VO	23881
AP	4/13
	299
	1
MAR	1981
SUPERS APPR.	

PAY THIS INVOICE ONLY
WITH CM #
FOR $ 4/11.01

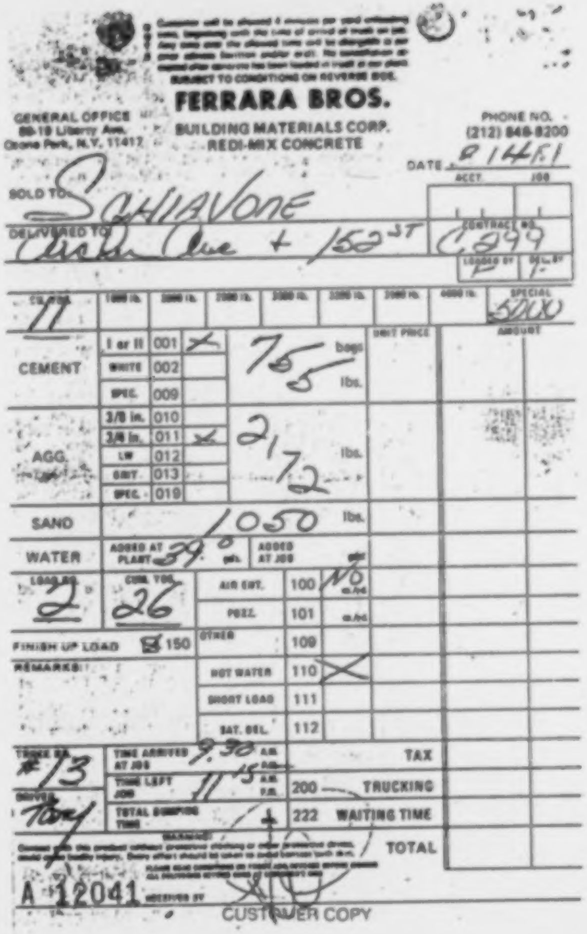
Sub-Total	59648.37
Waiting Time	728.39
Tax Exempt	
Total for March	60376.76

March	February	January	December	Prior	Total Due
60376.76	43012.26	47079.57	4182.26	22996.39	177647.24

# 299
MONTH. MARCH 8

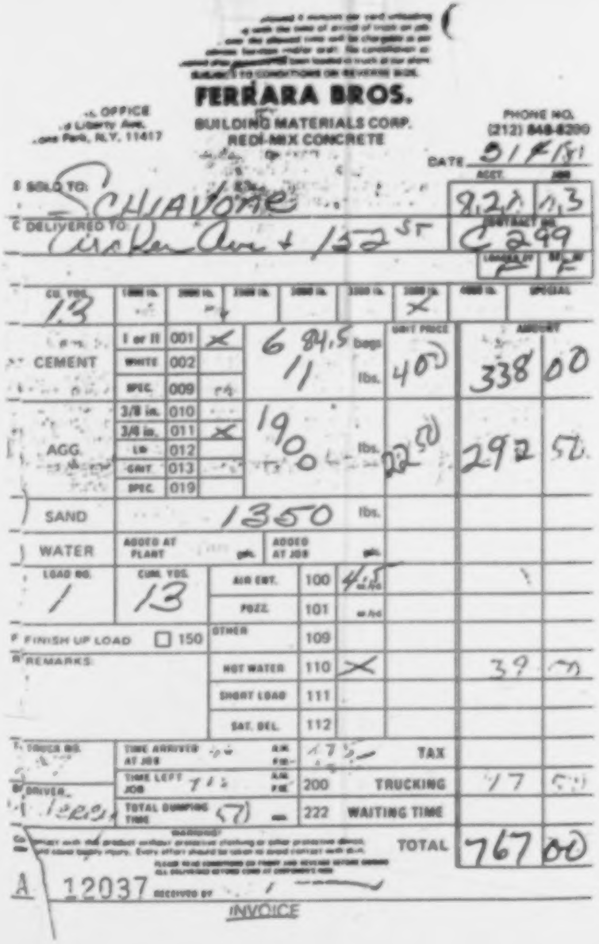
	1	2	3	4		5
5346	23	54^{00}	1242^{00}	21	3^{00}	63^{00}
5357						
5366						
5390	168		9072^{00}	100	3^{00}	300^{00}
5401						
5412	396		21384^{00}	54	3^{00}	162^{00}
5423						
5434						
5445	6		324^{00}			
5456	5		270^{00}			
5467						
5478						
5489						
5500						
5522						
5544						
5566	135		7290^{00}	70	3^{00}	210^{00}
5577	52		2808^{00}	52	3^{00}	156^{00}
5588						
5599						
5610						
5621	116.5		6291^{00}	36	3^{00}	108^{00}
5632						
5643						
5027	72.5		3915^{00}	19	3^{00}	57^{00}
3102						
5654						
5148						
5159	83	54^{00}	4482^{00}	55	3^{00}	165^{00}
				407		
Extra fd	1057		57078			1221^{00}
3500 lb 173 CY		2^{00}	346^{77}			
5000 lb 53 CY		8^{12}	430^{36}			
4000 lb 27 CY		6^{00}	162^{01}			
			$58,016^{36}$			1221^{00}

Pay 59,237.36



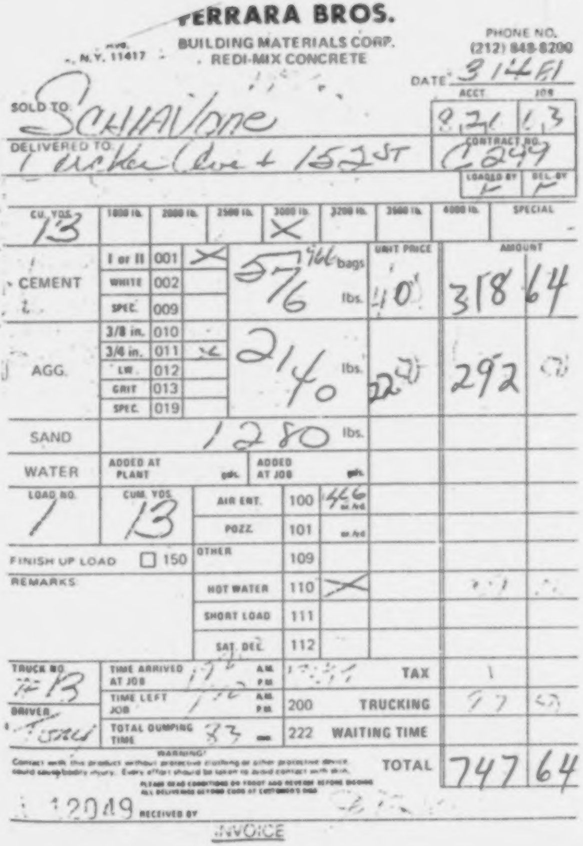
FERRARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE
GENERAL OFFICE
99-19 Liberty Ave.
Ozone Park, N.Y. 11417
PHONE NO.
(212) 848-8200
SUBJECT TO CONDITIONS ON REVERSE SIDE.

DATE 8/14/81
SOLD TO: Schiavone
DELIVERED TO: Cirker Ave + 152nd ST
CONTRACT NO. C299
SPECIAL 5000
CU. YDS. 11
CEMENT I or II 001 ✗ 765 bags
AGG. 3/4 in. 011 ✗ 2172 lbs.
SAND 1050 lbs.
WATER ADDED AT PLANT 39 gal.
LOAD NO. 2
CUM. YDS. 26
AIR ENT. 100 NO
FINISH UP LOAD ☒ 150
HOT WATER 110 ✗
TRUCK NO. #13
TIME ARRIVED AT JOB 9:30 A.M.
TIME LEFT JOB 11:15
DRIVER Tony
A 12041 RECEIVED BY
CUSTOMER COPY



FERRARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE
GENERAL OFFICE
99-19 Liberty Ave.
Ozone Park, N.Y. 11417
PHONE NO.
(212) 848-8200
SUBJECT TO CONDITIONS ON REVERSE SIDE.

DATE 3/17/81
ACCT. 221
JOB 13
SOLD TO: Schiavone
DELIVERED TO: Cirker Ave + 152nd ST
CONTRACT NO. C299
CU. YDS. 13
CEMENT I or II 001 ✗ 6 84.5 bags 11 lbs. UNIT PRICE 40.00 AMOUNT 338.00
AGG. 3/4 in. 011 ✗ 1900 lbs. UNIT PRICE 22.50 AMOUNT 292.50
SAND 1350 lbs.
LOAD NO. 1
CUM. YDS. 13
AIR ENT. 100 4.5
FINISH UP LOAD ☐ 150
HOT WATER 110 ✗ 39.00
TIME LEFT JOB 7½
TOTAL DUMPING TIME 57
TAX 47.5
TRUCKING 77.50
TOTAL 767.00
DRIVER Jerry
A 12037 RECEIVED BY
INVOICE



FERRARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE
, N.Y. 11417
PHONE NO. (212) 848-8200

DATE 3 14 81

SOLD TO Schiavone

DELIVERED TO Tucker Ave + 152 ST

ACCT	8,21
JOB	1,3
CONTRACT NO.	C249
LOADED BY	F
DEL. BY	F

CU. YDS.	1000 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3500 lb.	4000 lb.	SPECIAL
13				X				

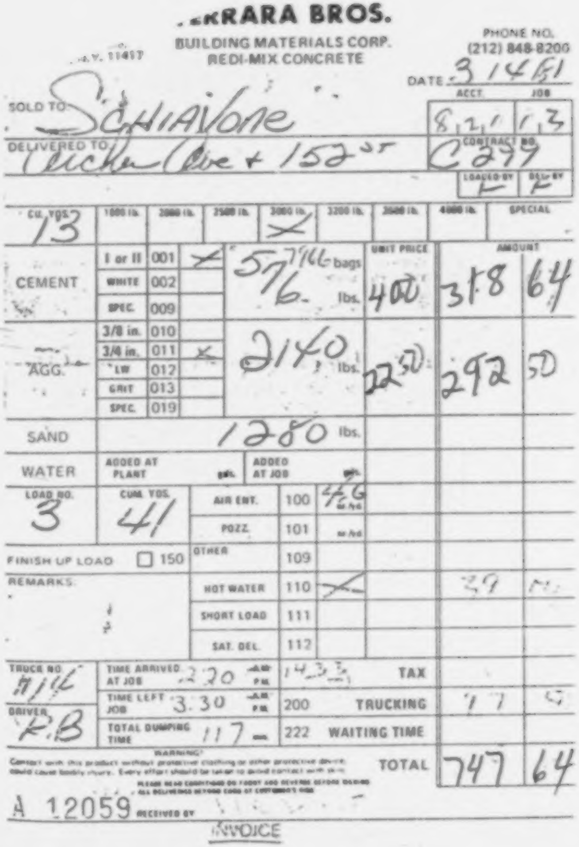
					UNIT PRICE	AMOUNT	
CEMENT	I or II	001	X	57 76 bags 5766 lbs.	40	318	64
	WHITE	002					
	SPEC.	009					
AGG.	3/8 in.	010					
	3/4 in.	011	X	2140 lbs.	22[illegible]	292	[illegible]
	LW.	012					
	GRIT	013					
	SPEC.	019					
SAND				1280 lbs.			
WATER	ADDED AT PLANT gals.			ADDED AT JOB gals.			

LOAD NO. 1	CUM. YDS. 13	AIR ENT.	100	4 1/2 % oz./cwt			
		POZZ.	101	oz./cwt			
FINISH UP LOAD ☐ 150		OTHER	109				
REMARKS:		HOT WATER	110	X		[illegible]	[illegible]
		SHORT LOAD	111				
		SAT. DEL.	112				
TRUCK NO. #13	TIME ARRIVED AT JOB 12 AM PM		[illegible]	TAX		1	
DRIVER [illegible]	TIME LEFT JOB 1 AM PM		200	TRUCKING		77	[illegible]
	TOTAL DUMPING TIME 33 min		222	WAITING TIME			
				TOTAL		747	64

WARNING! Contact with this product without protective clothing or other protective device could cause bodily injury. Every effort should be taken to avoid contact with skin.

12049 RECEIVED BY [illegible]

INVOICE



ERRARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE
, N.Y. 11417
PHONE NO. (212) 848-8200

DATE 3 14 81

SOLD TO Schiavone

DELIVERED TO Tucker Ave + 152 ST

ACCT	8,2,1
JOB	1,3
CONTRACT NO.	C249
LOADED BY	F
DEL. BY	F

CU. YDS.	1000 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3500 lb.	4000 lb.	SPECIAL
13				X				

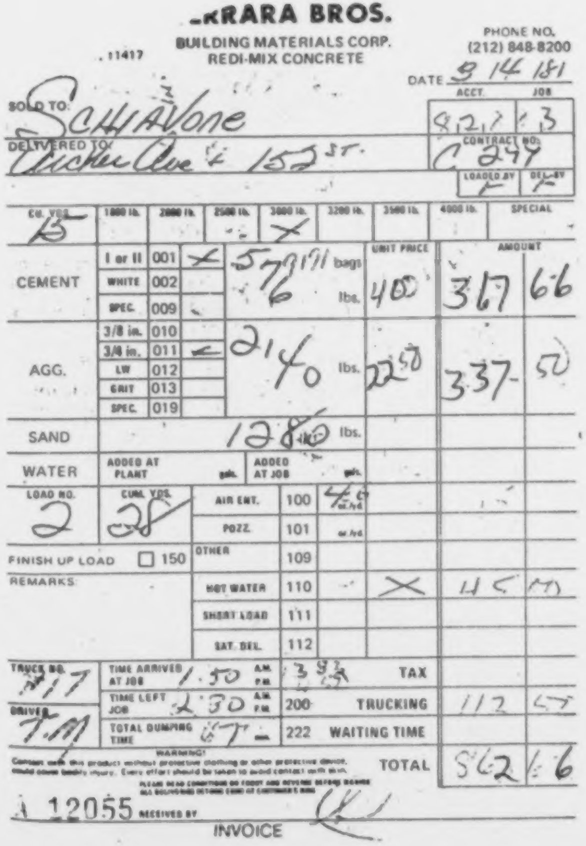
					UNIT PRICE	AMOUNT	
CEMENT	I or II	001	X	57 76 bags 5766 lbs.	400	318	64
	WHITE	002					
	SPEC.	009					
AGG.	3/8 in.	010					
	3/4 in.	011	X	2140 lbs.	22 50	292	50
	LW	012					
	GRIT	013					
	SPEC.	019					
SAND				1280 lbs.			
WATER	ADDED AT PLANT gals.			ADDED AT JOB gals.			

LOAD NO. 3	CUM. YDS. 41	AIR ENT.	100	4 1/2 % oz./cwt			
		POZZ.	101	oz./cwt			
FINISH UP LOAD ☐ 150		OTHER	109				
REMARKS:		HOT WATER	110	X		39	[illegible]
		SHORT LOAD	111				
		SAT. DEL.	112				
TRUCK NO. #114	TIME ARRIVED AT JOB 2:20 AM PM		1433	TAX			
DRIVER R.B	TIME LEFT JOB 3.30 AM PM		200	TRUCKING		77	[illegible]
	TOTAL DUMPING TIME 117 min		222	WAITING TIME			
				TOTAL		747	64

WARNING! Contact with this product without protective clothing or other protective device could cause bodily injury. Every effort should be taken to avoid contact with skin.

A 12059 RECEIVED BY

INVOICE



.RRARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE
.11417

PHONE NO. (212) 848-8200
DATE 9 14 81

ACCT. 8217 JOB 13
CONTRACT NO. C 299
LOADED BY F DEL-BY F

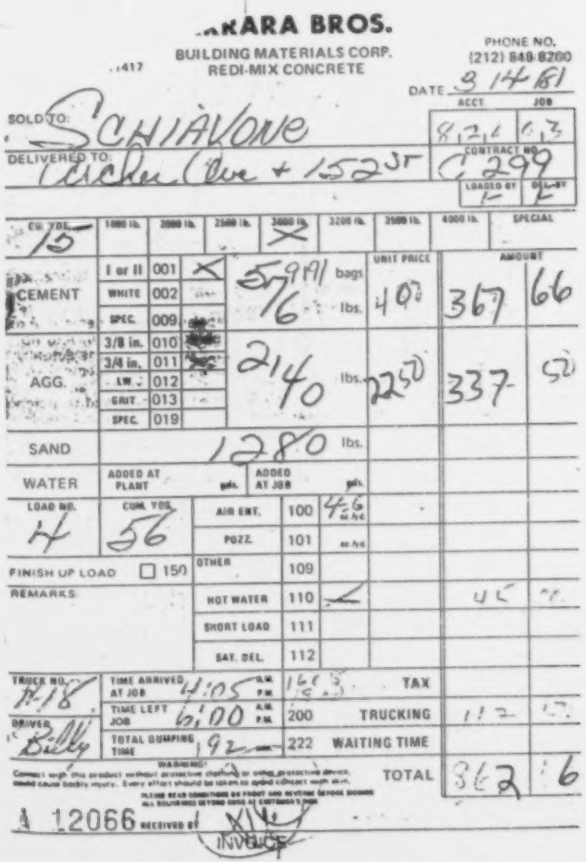
SOLD TO: Schiavone
DELIVERED TO: Archer Ave + 152 ST.

CU. YDS. 15	3000 lb. X				UNIT PRICE	AMOUNT
CEMENT	I or II	001	X	5 79191 bags 76 lbs.	400	367 66
AGG.	3/4 in.	011	✓	2140 lbs.	22.50	337 50
SAND				1280 lbs.		

WATER ADDED AT PLANT gals. ADDED AT JOB gals.
LOAD NO. 2 CUM. YDS. 28
AIR ENT. 100 4-6
POZZ. 101
OTHER 109
FINISH UP LOAD ☐ 150
REMARKS:
HOT WATER 110 X 45 00
SHORT LOAD 111
SAT. DEL. 112

TRUCK NO. 717
DRIVER T.M.
TIME ARRIVED AT JOB 1:50 PM
TIME LEFT JOB 2:30 PM
TOTAL DUMPING TIME 67
TAX 3 93
200 TRUCKING 112 50
222 WAITING TIME
TOTAL 862 16

A 12055 RECEIVED BY
INVOICE



.RRARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE
.1417

PHONE NO. (212) 848-8200
DATE 9 14 81

ACCT. 8221 JOB 13
CONTRACT NO. C 299
LOADED BY F DEL-BY F

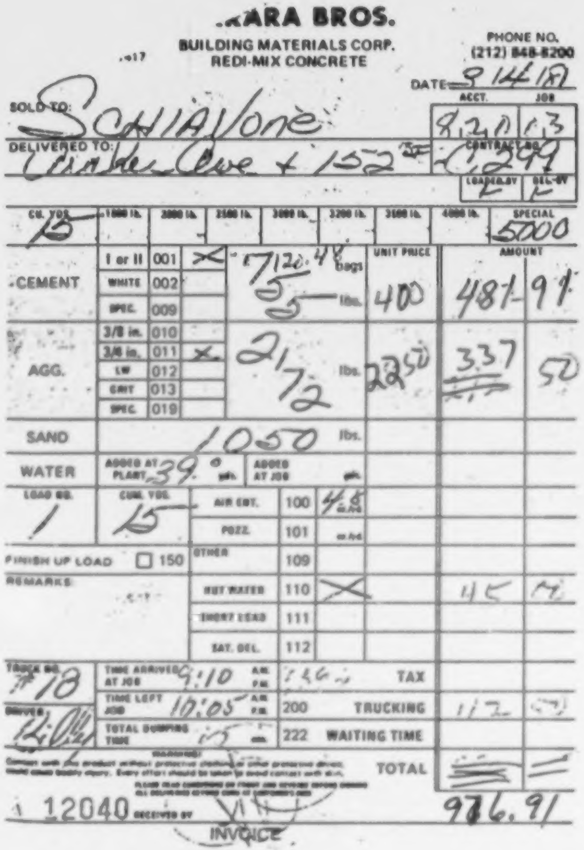
SOLD TO: Schiavone
DELIVERED TO: Archer Ave + 152 ST

CU. YDS. 15	3000 lb. X				UNIT PRICE	AMOUNT
CEMENT	I or II	001	X	5 79191 bags 76 lbs.	400	367 66
AGG.	3/4 in.	011		2140 lbs.	22.50	337 50
SAND				1280 lbs.		

WATER ADDED AT PLANT gals. ADDED AT JOB gals.
LOAD NO. 4 CUM. YDS. 56
AIR ENT. 100 4-6
POZZ. 101
OTHER 109
FINISH UP LOAD ☐ 150
REMARKS:
HOT WATER 110 ✓ 45 00
SHORT LOAD 111
SAT. DEL. 112

TRUCK NO. 718
DRIVER Billy
TIME ARRIVED AT JOB 4:05 PM
TIME LEFT JOB 6:00 PM
TOTAL DUMPING TIME 92
TAX
200 TRUCKING 112 50
222 WAITING TIME
TOTAL 862 16

A 12066 RECEIVED BY
INVOICE



ARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE
417
PHONE NO. (212) 848-8200
DATE 8 14 81
ACCT. 820 JOB 03
SOLD TO: Schiavone
DELIVERED TO: [illegible] Ave + 152nd St
CONTRACT NO. C299
LOADED BY L DEL. BY L

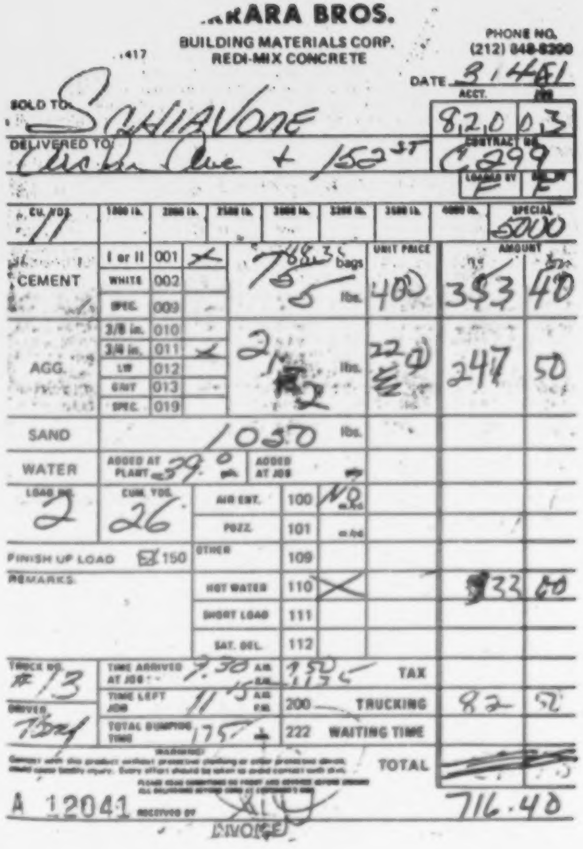
CU. YDS.	1000 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3500 lb.	4000 lb.	SPECIAL
15								5000

					UNIT PRICE	AMOUNT	
CEMENT	I or II	001	×	120.48 bags 755 lbs.	400	481	91
	WHITE	002					
	SPEC.	009					
AGG.	3/8 in.	010		2172 lbs.	22 50	337	50
	3/4 in.	011	×				
	LW	012					
	GRIT	013					
	SPEC.	019					
SAND				1050 lbs.			
WATER	ADDED AT PLANT 39.0 gals.			ADDED AT JOB gals.			

LOAD NO. 1	CUM. YDS. 15	AIR ENT.	100	4.5 oz.			
		POZZ.	101	oz.			
FINISH UP LOAD ☐ 150		OTHER	109				
REMARKS		HOT WATER	110	×		45	[illegible]
		SHORT LOAD	111				
		SAT. DEL.	112				
TRUCK NO. #18	TIME ARRIVED AT JOB 9:10 A.M.				TAX		
DRIVER [illegible]	TIME LEFT JOB 10:05 A.M.		200		TRUCKING	112	[illegible]
	TOTAL DUMPING TIME 15 min.		222		WAITING TIME		
					TOTAL		

A 12040 RECEIVED BY [illegible]   976.91

INVOICE



ARA BROS.
BUILDING MATERIALS CORP.
REDI-MIX CONCRETE
417
PHONE NO. (212) 848-8200
DATE 8 14 81
ACCT. 820 JOB 03
SOLD TO: Schiavone
DELIVERED TO: [illegible] Ave + 152nd St
CONTRACT NO. C299
LOADED BY F DEL. BY F

CU. YDS.	1000 lb.	2000 lb.	2500 lb.	3000 lb.	3200 lb.	3500 lb.	4000 lb.	SPECIAL
11								5000

					UNIT PRICE	AMOUNT	
CEMENT	I or II	001	×	88.35 bags 755 lbs.	400	353	40
	WHITE	002					
	SPEC.	009					
AGG.	3/8 in.	010		2[illegible]2 lbs.	22 00	247	50
	3/4 in.	011	×				
	LW	012					
	GRIT	013					
	SPEC.	019					
SAND				1030 lbs.			
WATER	ADDED AT PLANT 39.0 gals.			ADDED AT JOB gals.			

LOAD NO. 2	CUM. YDS. 26	AIR ENT.	100	NO oz.			
		POZZ.	101	oz.			
FINISH UP LOAD ☒ 150		OTHER	109				
REMARKS		HOT WATER	110	×		$33	00
		SHORT LOAD	111				
		SAT. DEL.	112				
TRUCK NO. #13	TIME ARRIVED AT JOB 7.30 A.M.	9.50 11.15			TAX		
DRIVER [illegible]	TIME LEFT JOB 11 15 A.M.		200		TRUCKING	82	52
	TOTAL DUMPING TIME 175		222		WAITING TIME		
					TOTAL		

A 12041 RECEIVED BY [illegible]   716.40

INVOICE

LETTER FROM FRANCIS X. MCARDLE, GENERAL MANAGER, GENERAL CONTRACTORS ASSOCIATION OF NEW YORK, INC.

December 9, 1985

Senator Alfonse M. D'Amato
One Penn Plaza
New York, NY 10001

Dear Senator D'Amato:

I apologize for the delay in response to your kind letter of November 7, 1985.

With respect to your proposed legislation that would mandate project-management plans, I believe that the federal government should prescribe these standards for each grantee, based on what the federal government would do if it were doing the job itself. The grantee's discretion should be limited in this area. I would further suggest that the plan alone will not achieve the end you desire, the improved management of capital works by public transit agencies; it might only add staff and costs in time and money to an overhead process that is already overly burdensome. Without intending to sound trite, I would contend that good project management stems from leadership that has incentives to do a good job, not just from a plan. The leadership has to be able to realize benefits from doing a good job and not be shielded from the consequences of failure.

This "benefit from the bottome line" is usually felt to be impossible to achieve in the public sector. I would contend that this truism can be overcome in the case of transportation. There are both public and private sector firms engaged in this business. They should be amenable to similar systems of rewards and penalties.

Any system that is established should provide rewards to individuals as well as to the systems that do well. An individual who can save the public money by bringing projects in on time or on money should benefit from the extra work; the private sector would certainly do so in similar projects, and it is against that private sector marketplace that the public agencies must compete for engineering leadership.

How to do this? I would suggest that a jury system be established that could award substantial bonuses to those whose achievements are beyond the norm. The size of the bonuses and the pattern of distribution should be based on the size of the savings achieved. The reward monies should come from the amounts of the grants that are recovered from projects that achieve savings. The process should be completely separate from the grant award process, because it is the efficiency of execution, rather than the substantive intent of the project, that you wish to reward.

There should be similar incentive awards (and penalties for unexcused failures) available for the achievements of consultants and contractors. Those who create greater value should share in the fruits of their labor. Those who create problems should suffer.

A system of rewards and penalties that produces real rewards will induce much greater marketplace efficiency and construction value. The good project management will result from people needing it, not just because a plan must be filed to meet another federal mandate.

The following paragraphs reflect our answers to your specific questions. There are two major difficulties that our contractors experience on Transit Authority contracts. The first is getting timely answers when new needs or field conditions force changes in the scope of contracts. The Transit Authority is much too slow in processing change orders. Because the Transit Authority will not permit such work to proceed without a change order in hand and because the processing delays are always ones that affect the progress of the work, every bidder must include in his bid his costs of delay anticipated because of change orders. Part of this problem, quite frankly, is caused by the UMTA rule that such work cannot be done on a time-and-materials basis, as is the custom in the construction industry. There are problems presented by work done on a T&M basis, but there are adequate control systems that can be employed. Surely the potential risks of loss in T&M work are much less than the costs of delays now incurred.

The second major difficulty exists with project closeouts. The fact that there are 280 contracts still open, some dating back to the early 70s, is a testament to the failures of the Transit Authority's project management system. Again, contractors must protect themselves in their bid prices against the inordinate delay costs associated with completing Transit Authority work. The first ninety-eight percent of the contract is hard enough; completing the last two percent and getting a reluctant operations group to shoulder their responsibilities through acceptance is pure torture.

The Authority should not drag the contracting community into their internal squabbles between operations and engineering. One person must be in charge, not two people with disparate interests, as is the case today.

Clearly to deal with these issues effectively the Authority must have competent people on board. Our members believe that the Authority's enginering manpower is at a crisis point. There are too few engineers with the requisite field experience to move work quickly to a satisfactory conclusion. There are too few middle managers with domestic training. There are too many people who are not adequately motivated, led, and upgraded to do more than obstruct. In the near future the cadre that has held the system together with bailing wire under the most adverse of fiscal conditions will have taken their well-deserved retirements. The system has no depth of people to take up the slack. A major effort is needed now to change the focus of the engineering group.

Many of the problems that are presented to a contractor in today's environment are precipitated by the unwillingness of the Transit Authority to assume the discrete financial burden of delays that the Authority causes. They have inserted into their contract a clause that says that the contractor can seek no damages for delays caused by the Authority. A contractor must thus anticipate and provide for all such costs in the bidding process. Such an attitude inflates the bid price and reduces competition.

The Federal Government has seen the folly of such an approach and compensates contractors upon the occurrence of delay. It is surely surprising to find that the Federal government allows a grantee to utilize practices that the Federal government finds are too costly. UMTA should simply mandate that grant recipients utilize all contractual standards and approaches that the Federal government uses itself.

I hope that our comments are helpful. If there are any questions, please do not hesitate to call. I have included for your staff's review, a 1979 report of the Association on the matter.

Sincerely yours,

Francis X. McArdle
General Manager

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